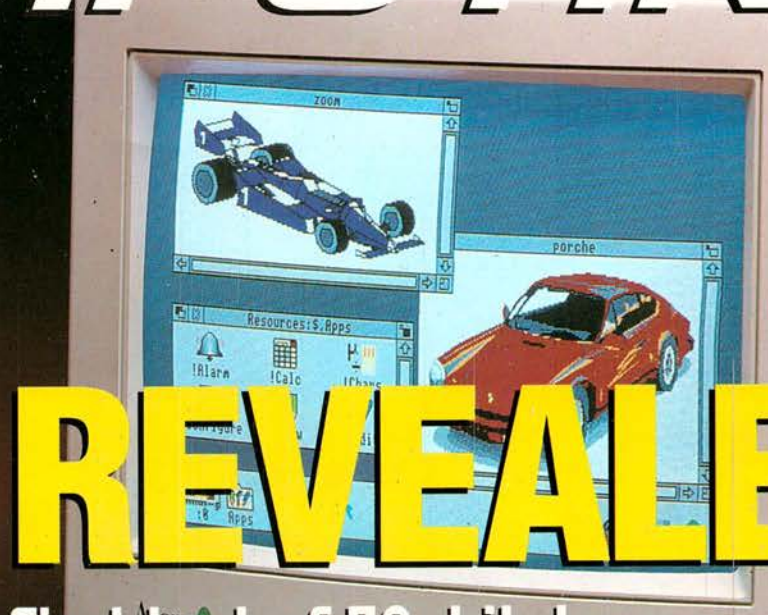
OCTOBER 1992 Vol.10 No.8 £2.95

NEW

Acorn COMPUTING

Formerly THE MICRO USER

Oh no!
More Lemmings on review



REVEALED!

First test of 32-bit dream machines

PLUS Britain's best Archimedes cover disk

Acorn COMPUTING
ARCHIMEDES VERSION
MegaDisk
NO. 1
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PASSED
CHECKED FOR ALL KNOWN VIRUSES
ANIMATION
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Hours of fun and experimentation with this extensive introductory version

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See page 37

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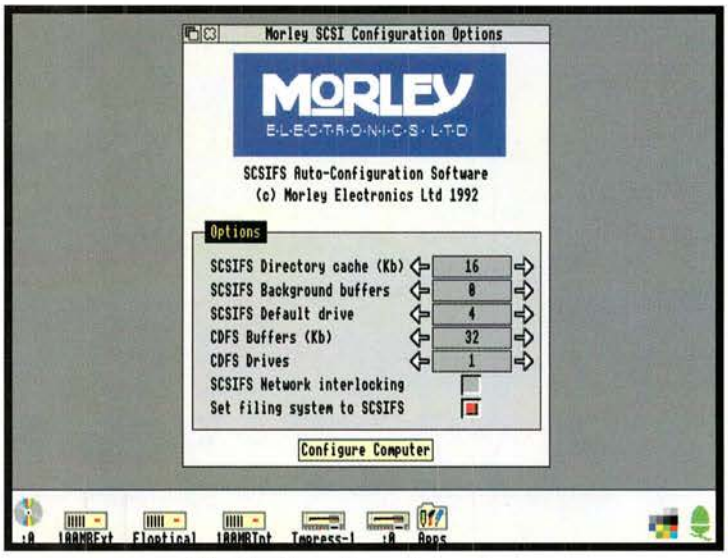
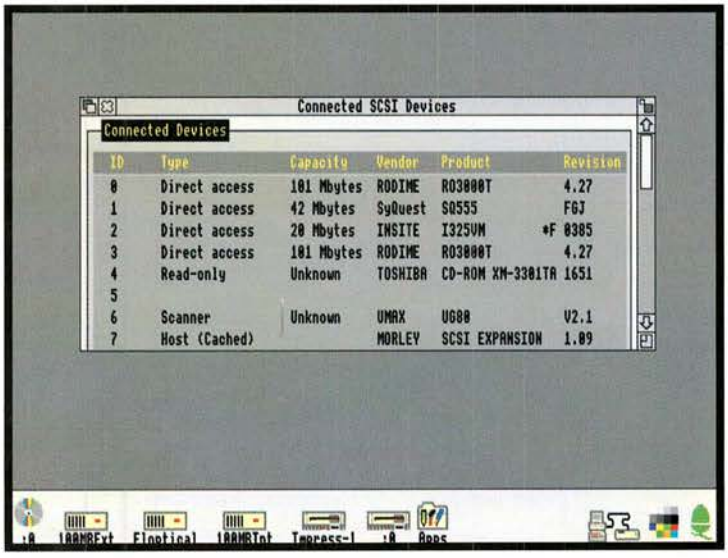
This is the way to the future ...



The SCSI configuration software


Connected SCSI Devices
Connected Devices
ID Type Capacity Vendor Product Revision
0 Direct access 101 Mbytes RODIME RO3000T 4.27
1 Direct access 42 Mbytes SyQuest SQ555 F6J
2 Direct access 20 Mbytes INSITE I325VM *F 0385
3 Direct access 101 Mbytes RODIME RO3000T 4.27
4 Read-only Unknown TOSHIBA CD-ROM XM-3301TA 1651
5
6 Scanner Unknown UMAX UG80 V2.1
7 Host (Cached) MORLEY SCSI EXPANSION 1.09

The SCSI investigation software

Our SCSI card can work with any ANSI compliant SCSI device some types of which are listed below.

- ***CD-ROM drives*** ❑
- ***Hard disc drives*** ❑
- ***Flat bed scanners*** ❑
- ***Floptical drives*** ❑
- ***Tape Streamers*** ❑
- ***DAT tape systems*** ❑
- ***WORM drives*** ❑
- ***Removable cartridge drives*** ❑

As a dedicated Acorn computer user you will understand better than anyone the restrictions you have faced in the past when trying to upgrade your machine.

We sympathise wholeheartedly and at the same time offer you a solution. Its name is SCSI, in full 'Small Computer Systems Interface'. Nothing new in that you might say, but you would be wrong. Our interface, instead of just being able to connect to a few well chosen devices, is capable of controlling any seven individual SCSI devices all at the same time. As long as they are ANSI (American National Standards Institute) compliant devices we guarantee that they will work with our card.

We designed our interface and engineered our software, to be fully compliant with ANSI standard X3,131-1986. This is the definitive standard by which all SCSI hardware and software must be measured. So if you are thinking of buying a SCSI setup ask whether it meets the above criteria. You will probably find very few manufacturers who will give you a straight answer.

The interface card can be used on any RISC-OS based machine fitted with a standard expansion slot. This means that when you upgrade your machine your SCSI setup can go with you.

*Our installation software makes setting up your system a piece of cake. Instead of messing around with *commands once your interface card and device are connected you simply run a single piece of software, give a quick Ctrl-Reset and off you go. We also include one or two rather useful utilities which give detailed information about the devices attached to your system and the speed at which they operate, together with a very comprehensive manual.*

It all adds up to a complete system that has the future built into it. You can buy our interface and devices either directly from ourselves or ask for it by name from any good Acorn dealer.

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- ❑ *Acorn RISC OS 2 or 3*
- ❑ *1MB RAM*
- ❑ *Standard Acorn expansion slot*

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*A300 series machines must have a backplane fitted to use these.
**A300 series machines must have a backplane and preferably a MEMC1A upgrade. † Currently available but excluding A4

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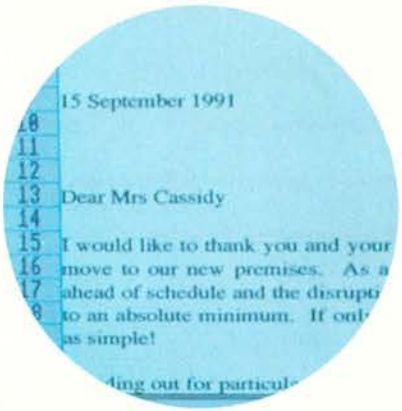
15 September 1991
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move to our new premises. As a
ahead of schedule and the disrupti
to an absolute minimum. If onl
as simple!
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the works
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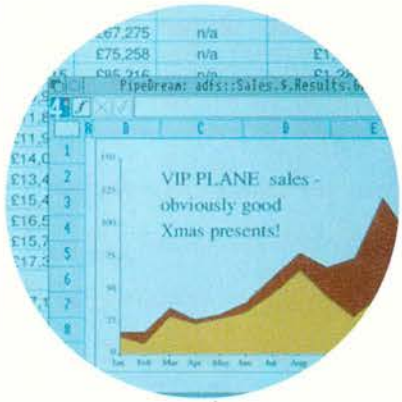

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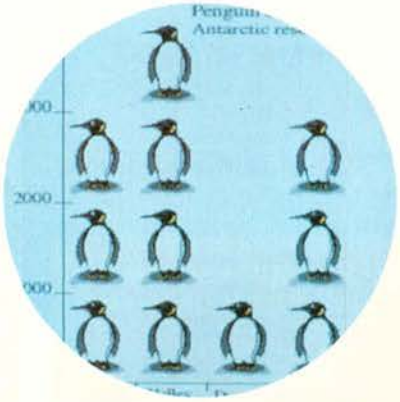
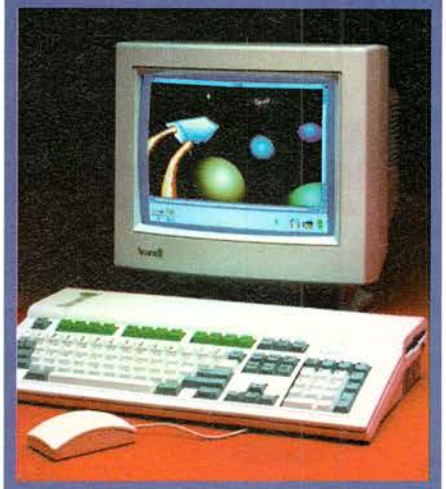


COVER FEATURE



The Acorn Colossus

After months of speculation we now know that Acorn didn't have a *single* machine up their sleeve – they had five.

In an unprecedented move they have stunned the computer community by releasing a whole new range of machines, aimed at the low to middle end of the market plus upgrades for existing ones.

Find out which machine or upgrade you need by reading our in-depth review starting on Page 25.

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* This symbol indicates that the feature contains at least one full length listing for you to key in on your micro. All programs for your machine are on the subscribers disk.

Get it right All the major listings in this magazine are accompanied by checksums to help you key them in correctly.

For full details of how to use them see the article on Page 86 of the February 1992 issue

● *This is the game that everyone will rave about and you can try it right now on our coverdisk*

● *Oh no! Just when you thought it was safe here come another hundred screens of Lemmings*

October subscription disk

This month's *Acorn Computing* disks are crammed with excellent software. The 8-bit one contains two games, a cashbook and a remarkable image distortion program, while the 32-bit disk features:

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Subscribers get the disk of their choice automatically.

You can subscribe for as little as £29.95 – turn to Page 43 for full details.

If you own an 8-bit machine this will save you the trouble of returning the 3.5in MegaDisk to swap it for a 5.25in one (see Page 37).

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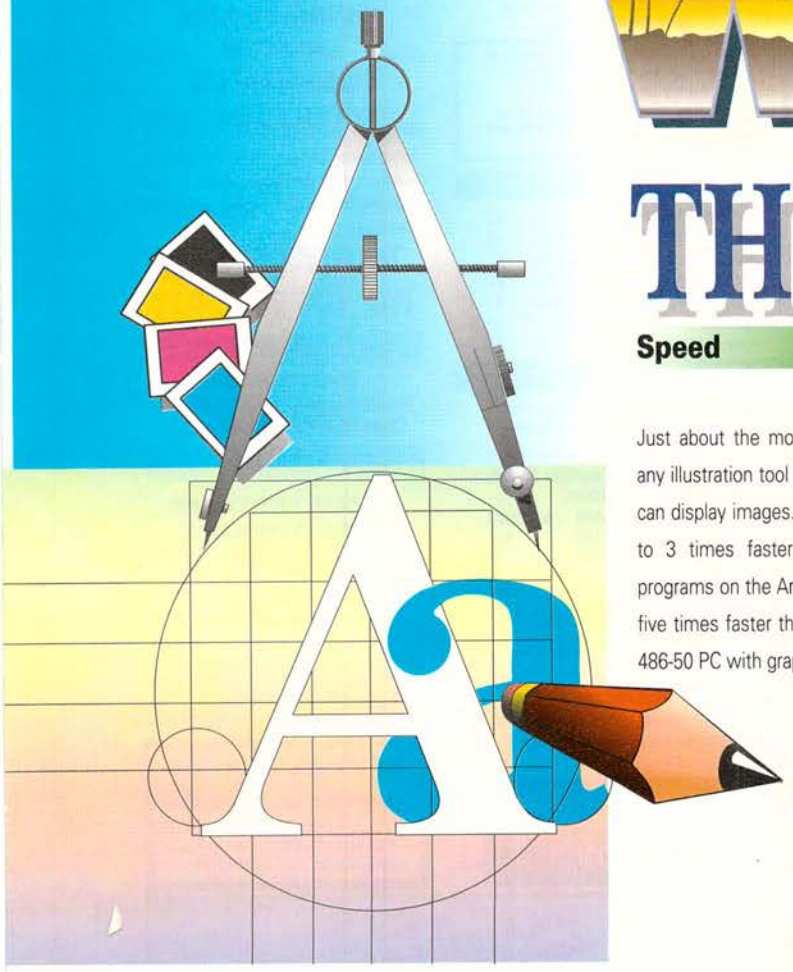

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Some of the key features include:

Anti-Aliasing display

Using our unique variable WYSIWYG control feature you can vary the screen image from simple and ultra-fast outline only mode, to a fully coloured and shaded display. At the maximum setting ArtWorks anti-aliases all drawings, practically eliminating on screen "jaggies". The effect is similar to having a screen display of several times the actual resolution.

Undo

This single feature is enough to set ArtWorks apart from other drawings programs, because with it you can experiment without risk. You can try something, or even a whole series of operations, and if you don't like the result, undo all the steps one by one back to the beginning. ArtWorks goes further by allowing just about every operation to be undone (and re-done), and by even allowing the undo record to be saved along with the drawing.

Speed

Just about the most important aspect of any illustration tool is the speed at which it can display images. ArtWorks is typically 2 to 3 times faster than other drawings programs on the Archimedes. It is typically five times faster than the fastest available 486-50 PC with graphics accelerator card.

Freehand drawing

ArtWorks offers a freehand drawing facility that means you can draw with the mouse exactly as you would with a pen or pencil. It doesn't matter if the line isn't very even since ArtWorks will draw a smooth bezier curve along the line, following your movements as closely as you wish. Combine this with the automatic shape filling, the simple and powerful set of curve editing facilities and you have a really simple, fast and intuitive set of drawing tools.

Advert and all illustrations produced entirely in ArtWorks. Seperated and output direct from ArtWorks.

THE ARTIST IN YOU

Colours and shading

ArtWorks is a full 24-bit colour capable illustration package - it can handle more colours than the eye can see. It offers a unique on-screen colour dithering system to simulate a large number of colour shades, offering over 4000 shades in 16 colour modes and over 100,000 shades in 256 colour modes. This colour dithering system works on all machines even with RISC OS 2.

Two other colour filling tools provide the fastest and easiest possible methods of producing graduated colour fills. Select either the straight graduated fill tool or the radial fill tool, then just click-drag-release. This single operation lets you set the position of the start colour, the direction and extent of the graduation and the position of the end colour. ArtWorks instantly displays the objects filled with a perfectly smooth graduated colour change.

Blending

ArtWorks takes this concept muchfurther than any other graphics program byallowing you to blend between shapes with different numbers of points. You can blend from one shape to another to another etc to create really subtle highlights and colour shading effects. (See the apple and BOSS example illustrations.) On top of this the blends are dynamic,calculated and drawn on-the-fly. This offers two great advantages: a) blends requirepractically no memory and b) you can edit the shapes that make up the blend andArtWorks will instantly re-blend using the new shapes.

220 Outline fonts

ArtWorks allows text lines to be typed directly on the page, even with the text rotated and shaded with a graduated tint! It also includes a comprehensive set of text manipulation features such as enveloping, true 3D perspective effects, text around the curve etc. And to complement these facilities the package includes 220 outline fonts, 200 of which are new to the Archimedes. Combine the fonts with the other outstanding ArtWorks features and you have perhaps the best value for money software packages available on any computer.

Review

> *"..it forms what is perhaps the easiest to use, but most advanced graphic illustration package on any personal computer today"*

ACORN USER
April 1992

ILLUSTRATION PROGRAM

Compatibility

ArtWorks is a fully compatible RISC OS multi-tasking application. It can import and export Archimedes Draw and Sprite files as well as files from the leading illustration packages (CorelDRAW, Adobe Illustrator, Aldus Freehand) on other machines.

Review

> *"Many effects that would take a long time in Draw can be achieved in seconds with ArtWorks"*

ACORN USER
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World Map Study, age 7-16	*ESM*	£42
Worldscape	*Leading Edge*	£16
World Wildlife, sprites	*Micro Studio*	£16
Worra Battle	*Oak*	£14
WorraCAD	*Oak*	£83
X-Fire	*Fourth Dim*	£21
Z88: A Dabhand Guide	*Dabs*	V0 £15
Z88 PipeDream Guide	*Dabs*	V0 £15
Zarch	*Superior*	£14
Zelanites (not OS 3)	*Micro Power*	£18

HARDWARE

NEW ACORNS

Education discounts available Please ask for details of combinations not listed here

A3010 1MB FD Family Solution	*Acorn*	£420•
A3010 1MB HD20 (as above + *ideA'92* Hard Disc)	*Acorn/ICS*	**£599•**
A3010 2MB FD Learning Curve with Monitor	*Acorn*	£675•
– as above + JP150 Printer	*Acorn*	£889•
A3020 2MB FD	*Acorn*	£749•
A3020 2MB HD60	*Acorn*	£899•
A4 2MB FD	*Acorn*	£1395•
A4 4MB HD60 with free PC Emulator 1.8	*Acorn*	£1695•
A4 4MB HD80/120	*Acorn*	£POA
A4 Extra Battery Pack	*Acorn*	£50
A4 Shoulder Bag	*Acorn*	£35
A4000 2MB HD80	*Acorn*	£945•
– as above + Home Office		£995•
A5000 2MB HD80 Multiscan	*Acorn*	£1395•
– as above + Learning Curve		£1455•
Pocket Book	*Acorn*	£212•

MEMORY

Fitting extra unless otherwise stated
† Fitting easy ‡ Fitting needs expertise

A3000 2 Mb Non-upgradable †	*IFEL*	£55
A3000 2 Mb Upgradable †	*IFEL*	£63
A3000 4 Mb †	*Atomwide/IFEL*	£140
A310 2 Mb Upgradable soldered ‡	*IFEL*	£99
– as above + MEMC1a		£149
– as above + MEMC1a + fitting		£200
A310 4 Mb soldered + MEMC1a ‡	*IFEL*	£225
– as above + fitting		£277
– as above + fitting + OS3 carriers		£298
A5000 2-4 Mb Non-upgradable†	*Atomwide*	£85
A5000 2-4 Mb Upgradable †	*Atomwide*	£109
A5000 2-8 Mb including fitting	*Atomwide*	£500
A5000 4-8 Mb including fitting	*Atomwide*	£391
A540 4 Mb †	*Atomwide*	£238

MISCELLANEOUS

386C PC Expansion Card	*Aleph One*	
– 1 Mb		£463
– 4 Mb		£579
4-slot 4-layer Backplane	*IFEL*	£59
9060S Monitor	*Eizo*	£450
A300/400 Fan kit	*ICS*	£15
A310 RISC OS Carrier Board ‡	*IFEL*	£25
A5000 Fitting Kit for second hard disc	*ICS*	£15
Arckey Function KeyStrip Holder	*ICS*	V0 £3
– pack of 4		V0 £10
ARM3 ‡	*Aleph One*	£189
Clares Micro Mouse	*Clares*	£26
Dongle Dangle with screw fittings	*ICS*	£6
Fan filters (pack of 10) (not A5000)	*ICS*	£6
FaxPack	*CC*	£289

ICS

051-625 1006

Floppy Discs, 10 × 3½" High Density		£10
Monitor Stand for A3000	*ICS*	£21
Podule Case for A3000		£16
Seal 'n Type spill-proof Keyboard Covers		
– Archimedes / A5000	*Kador*	£14
– A3000	*Kador*	£14
TouchWindow	*Lindis*	£234
Whisper Fan Quietener (for A300/A400 series only)	*ICS*	£15

PRINTERS

ArcLaser 300-6	*Calligraph*	£895
ArcServer 300-8	*Calligraph*	£985
Bubble Jet BJ-10ex	*Canon*	£187•
Bubble Jet BJ-10ex + TurboDriver	*Canon/CC*	£229•
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Bubble Jet BJC-800 + TurboDriver	*Canon/CC*	**£1499**
Laser Direct HiRes4 with 50-sheet tray	*CC*	£849
– 250-sheet Paper Cassette		£99
Laser Direct HiRes8	*CC*	£1280
Laser Direct LBP-4 Card	*CC*	£325
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Refill toner cartridge for Canon EPS		£50
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SCANNERS, DIGITISERS

ArcScanner including Epson GT-4000	*Clares*	£1660
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– A3000 version	*Wild Vision*	£278
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– for A5000		£490
– for other computers		£589
Image Scanner	*Iota*	£383
– Colour upgrade	*Iota*	£148
– Fast parallel card	*Iota*	£98
– Lighting unit	*Iota*	£91
i-Scan 200	*Irlam*	£539
i-Scan 400	*Irlam*	£589
Pineapple Colour Video Digitiser	*Pineapple*	£195
– A3000 boxed	*Pineapple*	£230
ProImage (Epson GT6000)	*Irlam*	
– for A5000		£989
– for other computers		£1089
Scan-Light A4	*CC*	£277
– with Sheet Feeder	*CC*	£360
Scan-Light 256	*CC*	£190
– A3000 internal	*CC*	£190
Scan-Light Professional	*CC*	£565
– as above + SCSI interface	*CC*	£699
SnapShot Colour Video Digitiser	*Lingenuity*	£195
– A3000 version	*Lingenuity*	£275
Spectra	*RISC*	£545
– A3000 Internal	*RISC*	£545
– A3000 External	*RISC*	£565
Vision Digitiser	*HCCS*	£49
– A3000 Internal	*HCCS*	£49
– A3000 External	*HCCS*	£62

I²C PRODUCTS

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I²C SWI (enhanced IIC_Control)	*Baildon*	£15
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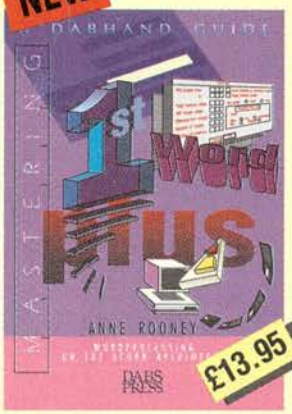

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A step-by-step guide that takes you through all the features of 1st Word Plus on the Archimedes, from installation to mail-merge. Mastering 1st Word Plus is comprehensive, thorough and easy to read.

Includes:

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- *How to type, edit, style and layout text*
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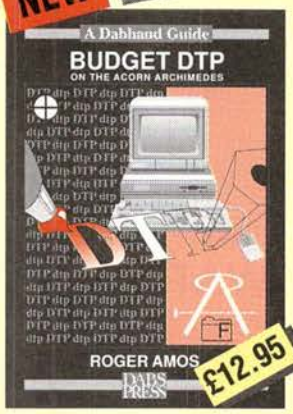
- *Using 1st Mail*
- *Using 1st Word Plus with other applications*

NEW



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Paul Gaunt - ARCHIMEDES WORLD

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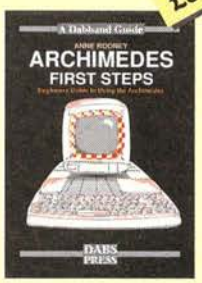
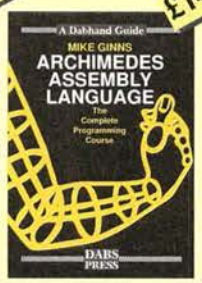


Introductory book for the Arc, covering the basic operations and use of !Edit, !Draw, etc.

£14.95

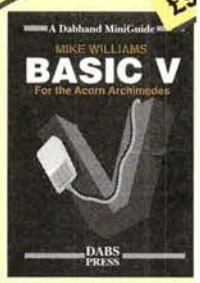
Useful summary of OS information with detailed examples. (£21.95) with disc.

£14.95



The only tutorial and reference on ARM assembler on the market, with many RISC OS examples. (£21.95 with disc.)

£9



A practical guide to programming in BASIC V on the Acorn Archimedes, with a wealth of easy-to-follow examples.

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BBC BOOKS

View Dabhand Guide
Bruce Smith's comprehensive guide to View wordprocessor. "For those who want a complete thorough and readable guide to View, then Bruce Smith is your man" (Beebug). £12.95 or £17.95 with disc.

Master Operating System
David Atherton's definitive reference work including the famous 'differences between all eight-bit models' section used by countless programmers to ensure compatibility across the full eight-bit range. £12.95 or £17.95 with disc.

Mini Office II Guide
Detailed tutorial by Bruce Smith and Robin Burton for the BBC/Master versions of the software. Price £9.95 or £14.95 with disc.

Mastering Interpreters and Compilers
Fascinating Bruce Smith title on creating high level languages. £14.95 with free disc.

MASTER 512

Master 512 User Guide
Full instruction for using the 512 and DOS Plus, with tips on software compatibility. £9.95 or £14.95 with disc

Master 512 Technical Guide
The companion guide with full 512 programming information and hardware expansion projects. Price £14.95 or £19.95 with disc.

Master 512 Shareware Collections
Two collections of PC shareware, all tried and tested on the 512. Includes WP's, spreadsheets, databases, games etc. Five full 800k discs in each. Each collection normally £29.95, special offer £25 for both.

ARCHIMEDES SOFTWARE

Instigator
Utility system providing disc sector editor, memory editor, disassembler, command line archiving, and much more. Price £49.95

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Similar to Master 512 Shareware but for the Arc PC Emulator. Two collections of five discs each. Normal Price £34.95. Now on special offer, both collections for £25.

ARCDFS
Very popular program to provide full DFS facilities on desktop or !65Host/!65Tube. *(Not A5000 compatible)*. Price £29.95

ARCHIMEDES/BBC BOOKS

Basic V Guide
BASIC V guide covering differences between earlier BBC BASICs and the superior version for the Archimedes. £9.95

C: A Dabhand Guide
Massive 512-page complete guide to C programming. No previous experience required. Arc & BBC sections £14.95 or £21.95 with disc.

OTHER BOOKS

Z88: A Dabhand Guide
Introduction to the Z88, by the designers of the machines own software. £14.95

Z88 Pipedream Guide
John Allen's detailed work on all aspects of Z88 PipeDream. Good explanations of printing. Price £14.95

Psion LZ OPL Guide
Ian Sinclair's guide to OPL programming on the LZ series of Organiser machines. £12.95

Games Action from Alien Images

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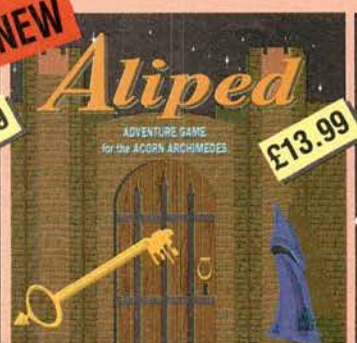
"to the accompaniment of decent music, effects and humourous speech"
Duncan Evans - ARCHIMEDES WORLD



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Acorn Computing enters new era

WELCOME to the completely new look issue of The Micro User – except now we're calling it Acorn Computing. If you're familiar with the previous magazine you'll appreciate how much of a re-launch this is – we hope you like it. Please write and let us know.

One of its innovations is the inclusion of the Editor's Comment – the bit where I say what I think about just about anything under the sun – as long as it's relevant to the Acorn world of micros.

The new releases mark a turning point with Acorn. The perennial criticism of Acorn has always been *they build great machines but can't market them and never price them right.*

To those in the business it's always seemed as if the Acorn management had the notion they were building Rolls-Royces and that quality would sell itself.

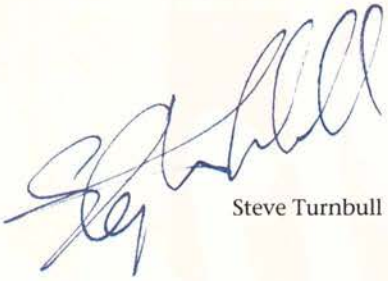
What they apparently failed to notice was that RR had been making cars for over 60 years and had a worldwide reputation to live on – Acorn were small fry in a very young market.

Rose-tinted glasses work perfectly when the world really is rosy, but it has never glowed much for Acorn. But has it changed?

Two years ago Acorn wouldn't have dreamed of putting their name to a big game and getting Olympic athletes to pull in the big media. But two months ago they did it.

Two years ago they wouldn't have released five new machines in one go, but they've done it. Just looking at the brochures for the machines shows clearly that Acorn really have had a change of heart.

In this recession it's a big risk releasing a whole range of new machines into a market glutted with PCs and games consoles. But given proper targeting and marketing it should work – and I believe it will.



Steve Turnbull

> Rose-tinted glasses work perfectly when the world really is rosy, but it has never glowed much for Acorn. But has it changed?

Meet the Acorn Computing professionals

The Acorn Computing husband and wife editorial team of Steve and Pam Turnbull has in-depth specialist knowledge of the Acorn machine range.

Articles are reknown for their technical excellence and even those clever people at Acorn respect our coverage.

So, if you want the best in Acorn news, views and hints and tips stay with Acorn Computing, the magazine written by users for users.

Steve Turnbull graduated from Manchester University with a BSc Hons in Computer Science. He then went to work for the Open University as a research programmer on The Project for the Blind where he designed a number of programs on the BBC B and Master for use in education and medicine.

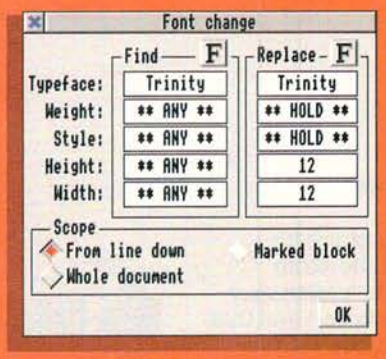
After writing freelance articles for the computer press he moved to *The Micro User* in 1988 as editorial assistant becoming editor two years ago. He still has a very strong interest in programming and was one of the coders in the Fun School series.

Pam Turnbull also graduated from Manchester University with a BA Hons in History. After working in specialist publishing for a few years she moved to Europress as Reviews Coordinator working on a number of magazines.

She has a good grounding in home computers with a special interest in their use in education. Her experience on 8, 16 and 32-bit machines allows her to place developments and programs in a wider perspective.

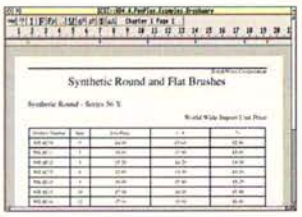
MEET THE NEW ADDITION TO THE PENDOWN FAMILY

Longman Logotron introduces a brand new word processor, with all the ease of use of the famous PenDown and with powerful new features, including:



FONT FIND AND REPLACE for easy changing of any attributes of a font throughout the document.

TABLE EDITOR to create, reorganise and perform sum and percentage calculations on tables.



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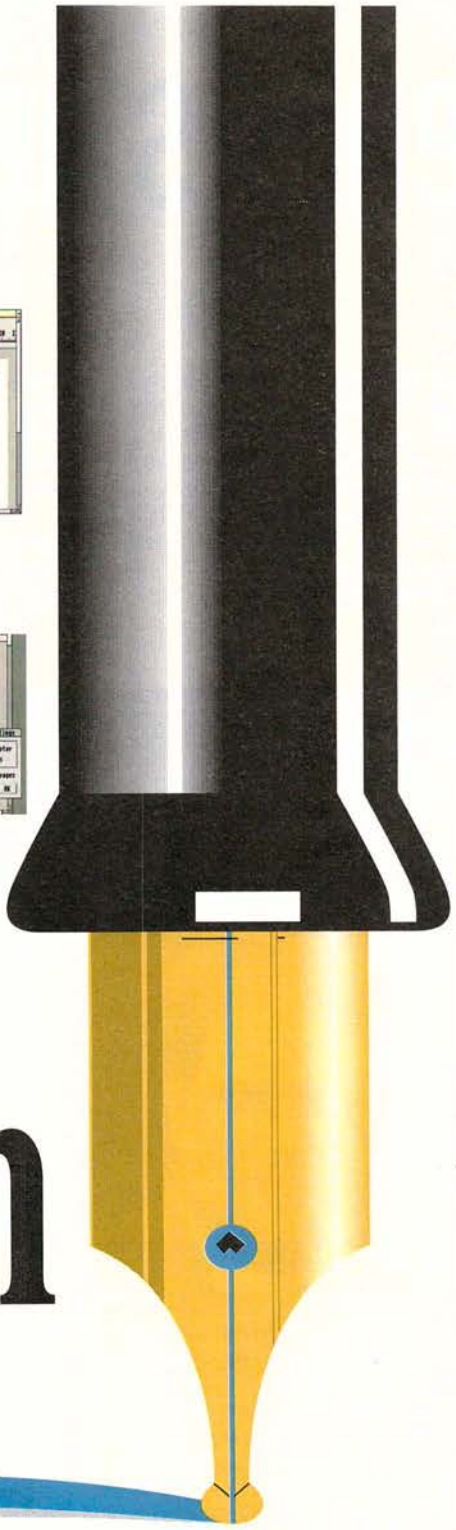

Archimedes **PenDown Plus**

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Statistically speaking

SERIOUS Statistical Software (051-327 4268) have developed a multi-tasking version of their statistical packages FirstJR and First. The wimp code has been written by Colin Turnbull – author of Calc – and the new versions should be available soon.

FirstJR has also been enhanced and the graphics modules should enable you to illustrate your statistical analyses. A major enhancement is the generation of drawfiles for producing publication-quality output.

The versatile data management ensures that complex data manipulations are easy to do. Data is entered and modified in a simple spreadsheet so you can easily import text and CSV files from other applications, while keeping compatibility with earlier versions of First.

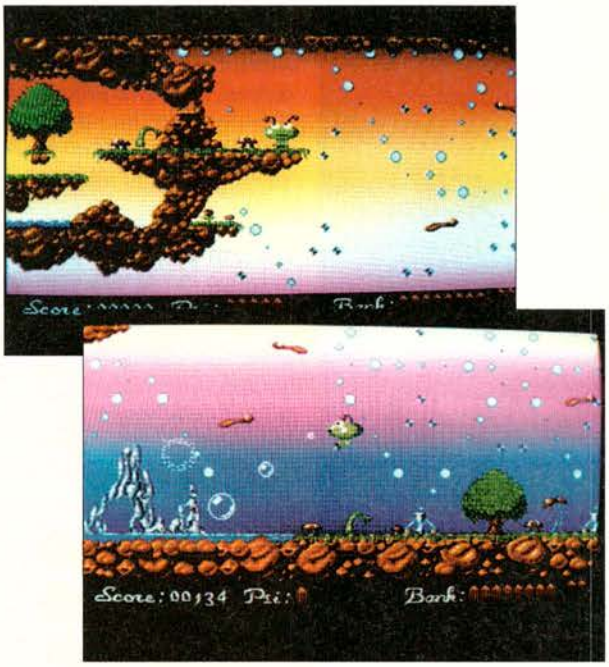
Pesky gribblies

AFTER the release of Pesky Muskrats, Coin-Age's (0282 692688) new product is Gribbly's Day Out. Due for release any time, it will be the first Archimedes game to use raster bars.

Joined by Andrew Catling of Last Ninja fame the team has worked on a superb looking game featuring Gribbly Grobbly. The hero of the hour, his task is to save all the little Gribblets over 16 multi-directionally scrolling levels.

Though this has been available on other formats, the Archimedes version has been updated and rewritten. Technically very clever – with the screen an overscan cinemascope shape and the raster bars scrolling in parallax – the game promises a lot.

Also poised for launch is Paradroid Arc. This is being written by the programmer behind Gods. Watch this space.



A bit of hush money!

PANASONIC (0344 853551) have released two new narrow carriage QuitePrinters. The 24-pin model, the KX-P2123M, costs £295 – £340 for the colour model, and the 9-pin KX-P2180M is priced at £225 or £270 for colour. If you prefer you can always upgrade to colour later by buying a kit for £45.

In line with EC directives which states that peripherals shouldn't distract attention or disturb speech, the Panasonic range offers quiet printing by incorporating sound reducing technology to make them reportedly quieter than many laser and ink-jet printers.

Both models offer draft and letter quality modes with three paper types including continuous and single sheet, multipart stationery and labels, with a maximum print speed of up to 240cps.

Meet the team

ACORN are launching their autumn season of Open Days with a two-day spectacular and keeping on the pressure right up to Christmas. These exhibitions are open to everyone and take place all over the country usually supported by and promoted through local dealers. For further information contact Acorn on 0223 245200.

This is also your chance to meet the *Acorn Computing* editorial team who will be at the shows highlighted below:

Bolton	Sat 3 Oct	Last Drop Village
Sheffield	Sun 4 Oct	Moat House
Jersey	Fri/Sat 9/10 Oct	tba
St Helens	Sat 10 Oct	tba
Rotherham	Sun 11 Oct	Moat House
Swindon	Sat 24 Oct	tba
Slough	Sun 25 Oct	tba
Nottingham	Sat 31 Oct	Moat House
Stoke on Trent	Sun 1 Nov	tba
York	Sat 7 Nov	tba
Northampton	Sun 8 Nov	Moat House
Middlesborough	Sat 14 Nov	tba
Hull	Sun 15 Nov	tba
Derby	Sat 28 Nov	tba
London	Sun 29 Nov	Forte Crest, S Mimms
Brighton	Sat 5 Dec	tba
Gatwick	Sun 6 Dec	tba
Bradford	Sat 12 Dec	Novotel
Leicester	Sun 13 Dec	tba

Vector upgrade path

VERSION 1.02 of Vector from 4Mation (0271 25353) is available free of charge to existing owners. The updated program's most important new feature is that the text-to-path facility now works with Risc OS 2 machines – for people who don't want the upgrade.

Another additional facility allows you to create mask substitutes automatically, which unlike Vector's own masks are renderable by other applications. For people who have acquired faulty drawfiles during editing in other applications Vector will now load them for you.

IDE mix-up solved

SOME of the biggest names in the Acorn market have recently been showing some confusion about IDE internal hard disks, power requirements and the A3000.

However, Acorn have now put the record straight by confirming that: "The internal dissipation figure of 0.5W refers to the internal 'mini' podule.

The power is allowed to be in addition to that generated by an Acorn Econet interface and an Acorn 1Mb ram card, where fitted." In layman's terms, internal hard disks are safe to use.

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techno-I COLOUR VIDEO DIGITISER

techno-I is the leading colour video digitiser for the Archimedes, with features usually found only on the top-of-the-range models for the IBM PC.

techno-I is a very versatile real-time RISC-OS based video digitiser; it can grab pictures from any video source (TV, Video recorder, etc.) and convert them into sprites. The digitised sprites can then be used in RISC-OS applications such as art or DTP packages.

Unlike simpler video digitisers, techno-I separates colour and luminance data while digitising, *techno*-I handles images in 25 bits, with 7bits luminance and 18bits chrominance (it encodes images in UVL colour space, which mimics the human visual system). This allows you to manipulate the captured images by hue, saturation or luminance; the colours are therefore truly WYSIWYG. *techno*-I will also give true monochrome representation of colour images.

The incoming video is displayed in real time in a viewfinder; the viewfinder display can be monochrome or colour. The viewfinder can be 1/16 or 1/4 screen area, you are able to drag the viewfinder around the screen.

The frame buffer resolution is up to 512 by 512, with programmable horizontal and vertical resolution. Complex frame manipulation features are built into the hardware, you are given options to interlace, superimpose or separate frames.

All viewing, video and digitising parameters are software controlled; there are no presets, no setting up, simple connect to a video signal, load the software and digitise!

techno-I features include:

- 25bits resolution, 7bits luminance and 18bits chrominance.
- Contrast, colour and brightness set from desktop.
- Image scaling up to 1280 by 1024 in any 256 colour mode.
- Selectable or automatic monochrome/colour digitising.
- Automatic detection of video signal, field frequency and colour presence.
- Single width podule using surface mount technology.
- Zero wait state 16bit MEMC expansion card.
- All picture adjustments from desktop, no hardware adjustments.
- Uses a single 5V supply, no extra 12V supply needed.
- Comptabile with international TV standards. PAL B, G, H, I, M, N, NTSC, 4.43MHz, NTSC M.
- CTI (Colour Transcient Improver) to sharpen the edges of coloured objects in the picture.
- PSI (Picture Signal Improver) to enhance the luminance content of the picture.
- Automatic gain control, with black level clamping.
- Hardware programmable noise filtering.
- Supplied with latest ChangeFSI release.
- SVHS input upgrade available.

"A big improvement on the best available from previous digitisers"
Trevor Attewell, Archimedes World

"... surprising good value compared to the rest of the field"
Rob Millar, Acorn User

"Using *techno*-I is a doddle ... an excellent and easy to use product"
Steve Bruntlett, The Micro User

techno-I for 300/400/540/5000 **£249(a)**
techno-I for A3000 **£279(a)**
(Securely boxed for external fitting)

SVHS Upgrade **£100(d)**
NO PRINTED PICTURE CAN DO IT JUSTICE!
Send for a data sheet and free demo disk.

techno-ION BUNDLE

A money saving package combining:

- ***techno-I real time video digitiser***
- ***SVHS upgrade to techno-I***
- ***Cannon ION CCD camera***
- ***SVHS and RF cables***

Capture 3-D objects in full colour on the Cannon ION camera. With the supplied rechargeable batteries you can take up to 50 pictures, storing them on the IONs floppy disk. You can then digitise the pictures using *techno*-I to provide high quality sprites, for DTP or art.

techno-ION for 300/400/540/5000 **£699(a)**
techno-ION for A3000 **£729(a)**

techno SCAN II

Probably the definitive monochrome scanning package!

The all NEW technoSCANII package provides full monochrome operation at 400dpi as well as 8 and 15 level grey scale scanning and provides the following features:

Suitable for all Archimedes micros and integrates fully with the multitasking RISC-OS environment.

Advanced memory management system releases memory when not required allowing scanning and DTP in a 1Mb computer.

Flexible zoom controll allows palettes to be imported, tailored and resaved with more powerful tone and tinting features than most painting packages.

Interactive help and a superb manual.

Direct printing with RISC-OSs drivers.

Saves sprites direct into PAINT and DTP or to disk.

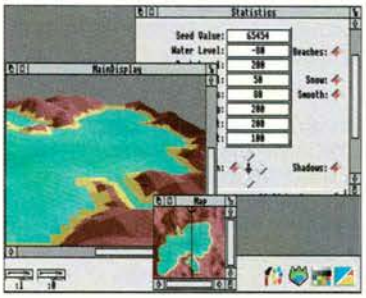
Saves sections and palettes into any graphics mode.

*techno*SCANII complete with interface card and manual **£129(b)**
*techno*SCAN for A3000 **£155(b)**
*techno*SCANII upgrade for *techno*SCAN **£22.50(c)**

Educational prices are available on all the above products.

Games galore

SOFTWARE 42 are a new programming house based in Essex with a host of games all due for release this autumn. First comes Ixion which is a 3D vector graphics adventure set on a future Earth which has become a prison planet. Interaction, fast action and puzzles are the order of the day.



Written by Tom Cooper who has released games into the PD as well as having commercial success, Ixion promises fast graphics and atmospheric sounds.

Raw Power is a simple beat-'em-up for the fight fan while WolfPack joins the ranks of flight simulators.

Moving into fractal design comes LandBuild which operates from the desktop with a wide range of options to let you change the palette and 3D perspective.

With some stunning high-resolution scenes varying from realistic coastlines to alien planets LandBuild is the brainchild of Armageddon, one of the best demo-writing teams around.

As well as games, Software 42 have utilities, clip art and a professional label printer in the pipeline. For more information contact them at: Software 42, 109 Ferry Road, Hullbridge, Hockley SS5 6EL.

Book for wimps

LEE Calcraft and Alan Wrigley are about to publish *Wimp Programming for All through Risc Developments* (0727 40303). Priced at £12.95 it is available this month and an additional £4.95 will buy you a disk containing the example programs from the book as well as some other applications.

The book introduces all the techniques involved in writing multi-tasking Wimp programs to run in the Desktop environment. No knowledge is assumed and the tutorial style of the book will explain the concepts involved and develop skills.

The articles are all relevant to Risc OS 3 and covers such areas as the Wimp poll loop, templates, setting up sprite areas and SWI calls.

DeskEdit 2 is about to be released and also comes from Lee Calcroft with a special upgrade price for earlier version users.

As well as improving on version 1, it also incorporates new major features targeted at the Basic and C programmer.

These include a complete Basic program renumber facility, a Basic program indent and support for all Basic abbreviations – type P. and the program translates it to PRINT.

Other useful additions are a programmer's calculator for handling bits, bytes and setting output flags and a multi-purpose browser, which lets you search and print the found items in a window – click on an item and you're taken straight to it.

For C programmers there is a throwback facility and Acorn's powerful Find application is also included – ideal for finding text among multiple files.

The special data save function saves the file and details about what you have been doing – markers, cur-

Some tasty art

FOLLOWING the success of Christmas Allsorts, Sherston Software (0666 840433) are about to release Food for Thought. This will be the second collection of high quality drawfiles created by artist Bob Barnett.

The drawfiles cover a wide range of foods from fruit to fish, from poultry to fridges and food processors. There are also several scenes such as a picnic and a kitchen where you can assemble the drawfiles.

As a finishing touch there are some cartoon faces which can be popped on to the fruit and vegetables. The whole packs costs £15.95.

Now shipping new Elite

HYBRID Technology (0223 861522) are the first software house to respond to the development of Acorn's A3010. Their new version of Elite is available for the same price, £39.95, and has had a joystick facility added. As on the original BBC version you use this for movement with the keyboard controlling acceleration and so on.

If you have the original Archimedes Elite you can upgrade to the joystick version – which will also support the game on machine with a joystick interface as long as it conforms to Acorn's SWI calls – free of charge. This version is now shipping and you can get a copy by sending the original disk to Hybrid.

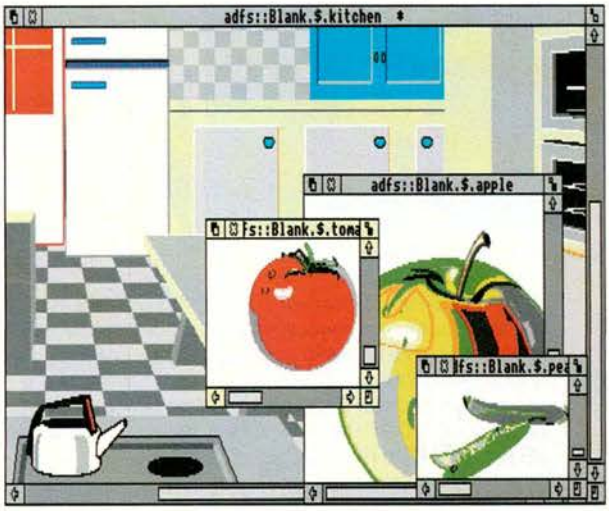
Back to the drawing board

MICRO Studio (0353 720433) are about to release ArtSchool a new art package aimed at the primary/junior school. It's easy to use with no complicated setup or customisation.

Icons are used throughout making the package completely mouse-driven. All the tools you'd expect have been included and teachers/parents can remove certain facilities that they don't want.

A nice feature is the undo option which allows you to use an eraser to undo parts of the picture or all of the last modification. There is also a redo option to replace it.

● *Clip art to make your mouth water*



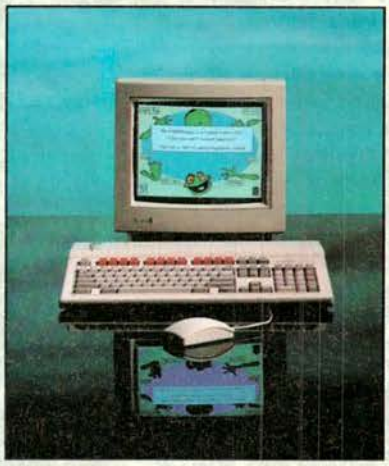
BEEBUG

The Archimedes Specialists

Beebug are one of Acorn's largest dealers. We have a large showroom in St. Albans (close to the M25 and M1) and an efficient mail-order service specialising in sending Acorn Computer equipment to homes throughout the country. Additionally, we have an excellent technical support team to provide any advice and help that you may need. Beebug are not here today and gone tomorrow. You can trust us, we have been working with Acorn for over 10 years now!
Our sister company, RISC Developments, is also well known for producing quality software and hardware add ons for the Acorn range, as well as the RISC User magazine.

The New Line Up

We now have great pleasure in offering the new and exciting line up of computers from Acorn. All of these systems feature RISC OS 3.1, the new multi-tasking operating system and are supplied with a mouse, stereo sound, 2Mb (unformatted) floppy drive, serial and printer ports. Additionally, they will all run any of the standard Archimedes software titles, of which there are now over 2,000.



0151g A3020 FD Colour £749.00
0152g A3020 FD Multi-scan £799.00
0155g A3020 HD60 Colour £899.00
0156g A3020 HD60 Multi-scan £949.00

A3010

This system represents an incredible breakthrough for Acorn. For only £499 INC VAT you can now have the full power of an Acorn RISC OS computer. This system is based around the new ARM 250 processor, which typically offers a 50% speed increase on ARM 2 systems (A3000/A310/A400). 1Mb RAM (upgradable to 2Mb), 2 joystick ports and TV modulator are all built in to the A3010. It is supplied with EasiWord word processor, Audio Training Tape and Quest for Gold Game in a pack called The Family Solution. Alternatively, the A3010 is available in The Learning Curve package. This also includes a RAM Upgrade to 2 Mb, Colour Monitor, PC Emulator, Guide to the National Curriculum and Genesis Collection.

0172g A3010 Family Solution £424.68
0182g Colour Monitor for A3010 £220.00
0173g A3010 Learning Curve £680.00

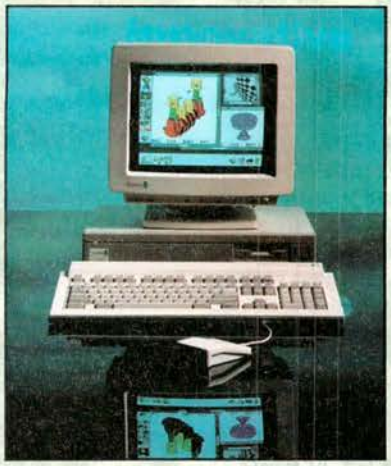
A3020

This system is targeted towards the schools. Along with the ARM250 it offers 2Mb RAM (upgradable to 4Mb), colour monitor (or multi-scan) and optional 60Mb internal hard drive.

A4000

This system is supplied in a slimline version of the A5000 metal casing. It has a separate PC style keyboard, the ARM250 processor, 2Mb RAM (Upgradable to 4Mb), colour monitor (or multi-scan) and an 80Mb hard drive. It is also available in a Home Office pack which includes Easiwriter wordprocessor, Audio Training Tape and Desktop Database.

0227g A4000 Colour £949.00
0234g A4000 Multi-scan £999.00
0209g A4000 Home Office Colour £999.00
0215g A4000 H. Office Multi-scan £1049.00



0211g A5000 2Mb HD80 Multi-scan £1399.00
0206g A5000 4Mb HD120 Multi-scan £1599.00
0213g A5000 Learning Curve £1445.96

A5000

This now represents even better value for money. The A5000 features the ARM3 processor, 2Mb RAM (upgradable to 4Mb), an 80 Mb hard drive and multi-scan monitor. It is available in a Learning Curve bundle which also includes Acorn DTP, 1st Word Plus wordprocessor, Pacmania Game, PC Emulator and Genesis Plus. A separate version of the A5000 is also available (but not in the Learning Curve), which includes 4Mb RAM and 120 MB hard drive as standard.

A4 Portable

This is effectively an A5000 in a notebook format. An excellent machine with ARM3, 2Mb RAM (upgradable to 4Mb) and optional 60Mb internal hard drive. (Free PC Emulator with 60Mb version until Christmas.)

0317g A4 2Mb FD £1399.00
0316g A4 4Mb HD 60 £1699.00

0390g Acorn Pocket Book £212.72

Acorn Pocket Book

This is the surprise addition to the range. It is not RISC OS based and has none of the features shared by the rest of the systems. It has built-in applications of wordprocessor, spreadsheet and database with 256K RAM and optional 4Mb Solid State Disc. An optional link kit enables it to transfer data to any Acorn RISC OS computer.

RISC OS 3 Upgrades

Upgrades to the new version of RISC OS are now available. This will certainly become the new standard for all Archimedes machines. A3000, A540, A400/1 series computers need only code 0888d. A305, A310, A440 systems will also need a Hardware Upgrade Kit (dealer fit) code 0887b. A5000 owners need a ROM only kit, code 0889b. If you are unhappy about fitting RISC OS 3 yourself, we are pleased to offer a free fitting service to customers. Please phone to arrange this.

0888d RISC OS 3 Complete £41.70
0889b RISC OS 3 (For A5000) £16.17
0887b Hardware Upgrade Kit £25.53

Educational establishments, please phone or write for quotation.

For More Information

Please write or phone for more information or an Acorn brochure. Additionally we would be pleased to send you a complimentary copy of our 52 page full colour catalogue on just about everything for the Archimedes computer.

Ordering Details

These are all new products so please call to check stock availability. Orders received will be dealt with in strict rotation and cheques not cashed or credit cards debited until your system is actually sent.

Prices are shown exclusive of VAT.

Carriage: RISC OS please add £3.00, computers please add £9.00.

BEEBUG Ltd. 117 Hatfield Rd. St.Albans. Herts AL1 4JS Tel. 0727 40303 Fax 0727 860263

Enter the next dimension...

THERE is more news on Black Angel and Chopper Force from 4th Dimension (0742 700661) which are due for an autumn release.

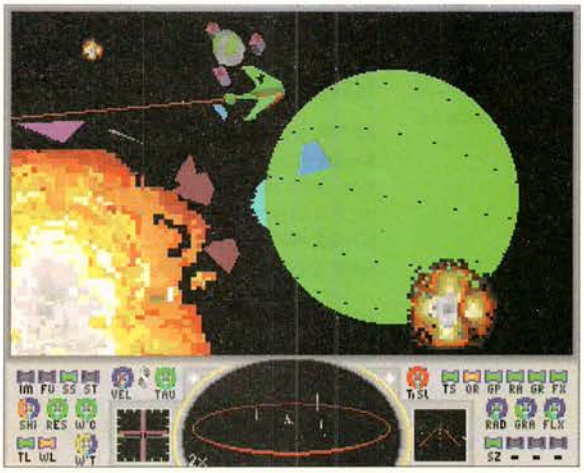
Black Angel requires skill and diplomacy as in a future universe events have conspired to convince you to buy a second hand star fighter. With this you can roam the galaxy searching for the parts to the key that will unlock the Star Gates.

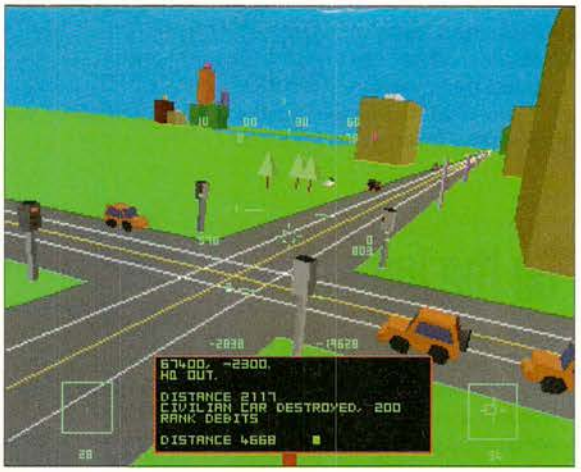
As you paid on the never never for your ship you'll have to earn enough to keep up the interest payments. Do watch out for the Tau Hoppers – they take and do what they want – as they use general relativity to escape into the future.

Your Maan Industries Langhort Kestral ship is fully equipped and you have all standard guidance equipment plus time displacement compatibility on your side.

But have you got the guts and the skill? Black Angel costs £34.95. The long awaited Chopper Force is about to land, too, for £29.95. Using 3D graphics and stunning sound effects in a futuristic helicopter simulation, the question is whether or not you're ready to join this elite band of police helicopter pilots combatting terrorism.

What is more, an excellent remote-controlled model helicopter will be given to the highest scoring pilot.





● *Can you survive what space throws at you (far left)*

● *Pilot your helicopter into the future (left)*

Club news

CLUB A3000 – now renamed The Arm Club – have been running a series of successful one-day courses on everything from games to databases. All courses cost £20 and include lunch and they are already planning their 1993 calendar:

March 7	Beginners' Day
March 21	Games Day
April 4	Building Blocks
April 18	Music Day
May 2	Applications Day
May 16	Pipedream

For further details on these and other courses – as well at the Arm Club Open Day on November 14 this year – contact Bruce Dickson on 081- 959 3321.

Table the motion

VITRA (071-480 1122) are well known for their office furniture. Piccolo, a mobile table, and the brainchild of Italian designer Mario Bellini is the latest addition to the range. Piccolo can be adapted to different environments and the computer table designs start at £470.

Charting progress

RISC Developments (0727 40303) have released version 1.1 of ChartWell, their graphics and charts package.

Improvements on the previous release include full handling of negative values in bar charts whether they are vertical or horizontal, as well as in line and scatter graphs.

If you opt for the negative option you can choose whether the axis labelling appears on the axis or at the bottom edges of the screen display. Bar charts which use negative values will also allow you to have a solid or transparent platform for 3D displays.

In addition the data points have been extended so that you can configure ChartWell to handle more than the fixed limit. Some work has also been done on the positioning of labels and values to avoid overlapping.

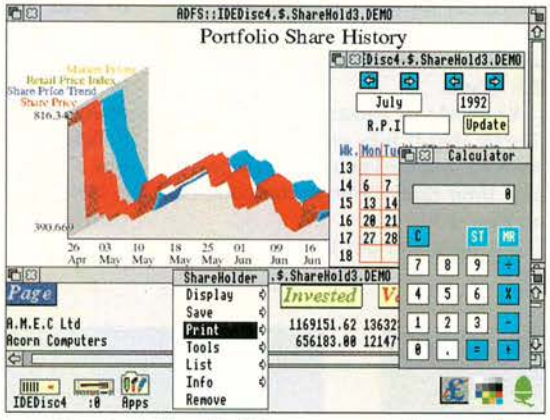
The price stays at £29.95 (inc VAT) and version 1.1 is available free of charge to all existing users if they return their original disk.

Bulls and bears

SHAREHOLDER is the latest of Silicon Vision's (081-861 2173) products to be enhanced and updated. Called ShareHolder Professional it has documentation demonstrating the new facilities with automatic share price updating via Ceefax, Oracle, Prestel and other ViewData applications.

Share price trend and general market price extensions give improved analysis over the earlier share price history charts and there is a retail price index capability for each month.

ShareHolder Professional 3 costs of £275 or £75 to upgrade from version 2. If you didn't upgrade version 1 of ShareHolder you can still upgrade to ShareHolder Professional for £125.



On the wires

NEW Era Microsystems (0252 345426) have launched the Scarab 9600 Cordless Modem. The unit features a unique relocatable head which incorporates both the transceiver and the antennae.

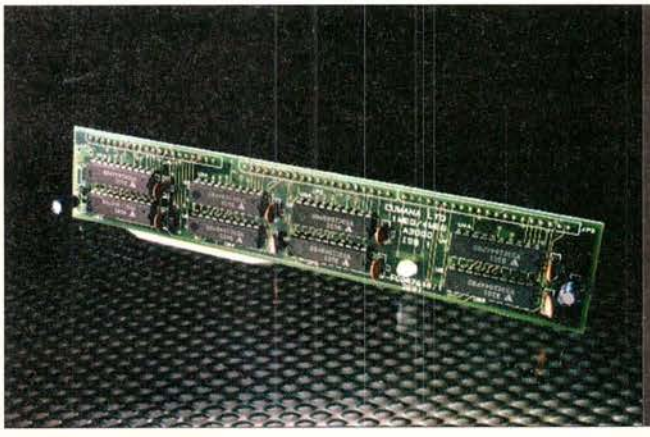
It operates at 418MHz at a 9600 baud rate over 250 yards. As it is compatible with any RS232 modem or conventional cabled equipment it makes a suitable LAN – local area network – tool.

The price is £265.

Short-cut

WITH the news of the updated version of Risc OS 3 now available to all Archimedes owners, Sherston Software (0666 840433) have released !Help3. For £10 this is ideal for the novice or newcomer to the wimp environment.

!Help 3 is a simple introduction to Risc OS 3 and uses the same approach used in the first in the !Help series – !Help, a Teachers Companion to the Archimedes and A3000. It's ideal for people who haven't the time or inclination to read the manuals.



Ram price cut

A3000 owners can now enhance their machines with a 1Mb ram upgrade for just £29.95 including VAT and delivery. Cumana (081-547 3418) have dropped the price from £53 and the offer is open to both home and school users.

The upgrade plugs neatly into the ram expansion slot and its slimline design means that you don't have to remove the keyboard to fit it.

Cornish Acorns

FOLLOWING the success of recent Acorn Open Days, an additional event has been scheduled. The exciting new range of Acorn hardware will be on show in the St Austell area in November. This will be the first public viewing in Cornwall since the recent release.

Workers wanted

FLEDGLING software house Iona Software are on schedule for releasing a host of games in time for Christmas. However, for some new projects in their pipeline they are looking for new programmers, graphic artists and musicians.

If you are none of the above but have some good ideas, they do accept games in storyboard format and informed us that they pay handsome royalties for original ideas. If you are interested contact Michael Henry at Iona Software, 39 Islandkelly Park, Lisburn, Co Antrim BT28 3HA.

Implementing RFI

AFTER noting that Acorn are building Radio Frequency Interference protection into their new range of computer, it's interesting to see that Cumana (0483 503121) are doing the same with their CD-Rom drives.

Commenting on the importance of RFI protection, Cumana's Chris Mage commented: "In a network situation slight variations in data transfer rates caused by radio frequency interference can be critical to the performance of the system."

Clear as crystal

FOLLOWING the news last month about Calligraph's (0223 461143) 1200dpi laser, they have added a new model to their range of eight direct drive laser printers for the Archimedes.

For £1,399 this printer is based around the Qume CrystalPrint Express engine. It is a 12ppm 600dpi dual bin machine which makes it the fastest printer in its range.

Each tray takes 250 sheets and flexible software options aim this model at heavy use applications and it can accommodate card, transparencies and labels.

You can modify the 600dpi resolution to achieve 1200dpi horizontally. However, the actual resolution will depend on what is being printed. Other variables such as the choice of halftone pattern can also affect the output. The best all-round resolutions are around 600-800 dpi.

Calligraph offer a solution to network printer sharing hold-ups as the choice of bin can be selected from the desktop. There is a 4Mb minimum memory requirement for this model though.

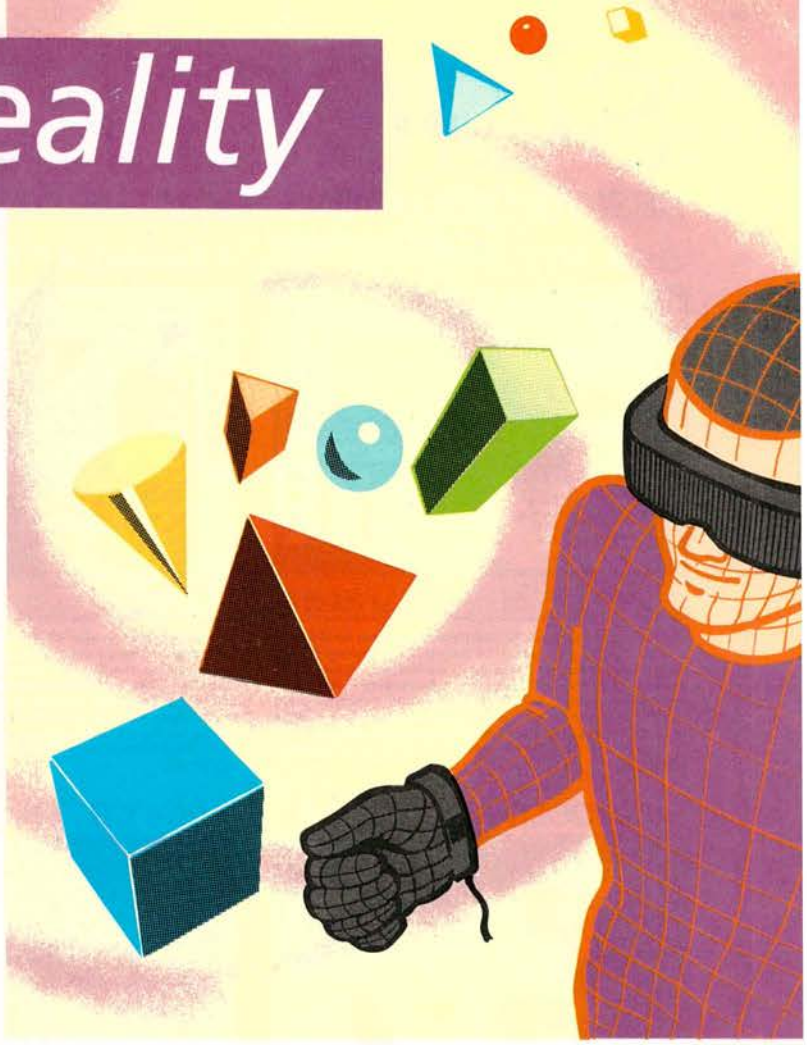
Virtual Reality

Explore New Dimensions...

Read about the exciting world of virtual reality and experiment with stereoscopic images on your screen.

*You can get a **FREE** copy of the article 'Exploring Virtual Reality', a **FREE** disc of programs and **FREE** red and green gels, if you send an addressed label and a 1st class stamp to:*

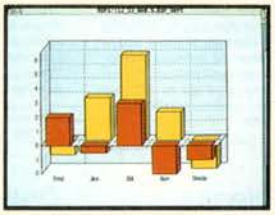
VR Offer, RISC User,
117 Hatfield Rd., St. Albans, Herts, AL1 4JS

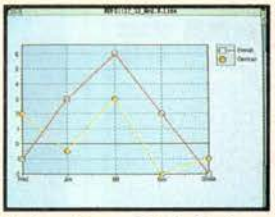


NEW

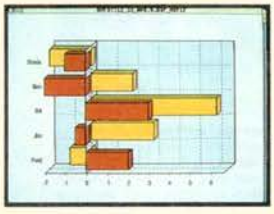
ChartWell Version 1.1

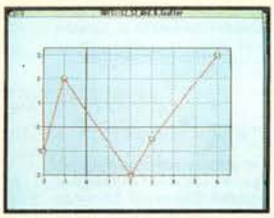
A sophisticated Graph and Chart Package which now offers new features.





Full handling of ***negative values*** in bar charts (both vertical and horizontal), line graphs and scatter graphs. Where negative values are used, the user will be able to choose whether axis labelling appears on the axis itself or at the left and/or bottom edges of the graph display. Bar charts using negative values will have the option of a solid or transparent 'zero platform' for 3D displays.





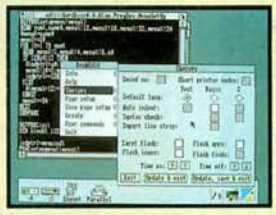
More ***flexible handling of data*** limits, allowing the user to configure ChartWell for handling more data points than the current fixed limit. Users will now be able to allocate as much of the available memory in their system as they wish for this purpose.

A number of improvements to positioning of labels, titles and values have been incorporated to avoid potential clashes and overlaps which occurred in some circumstances.

Chartwell and manual
Price **£29.95 inc** + £2 p&p Code **PCHWa**
Version 1.1 of ChartWell is available free of charge to existing users (send the original disc and a SAE marked **ChartWell Upgrade**).

DeskEdit Version 1.20

is a release following a number of glowing reviews in the computer press ... and offers even more features for text editing and word processing tasks, Basic and C source editing.



A new ***single key save-and-run feature in Basic mode*** permits virtually instantaneous testing of programs and applications as you edit them.

The ***improved procedure and function browser*** now lets you browse in both directions

In text mode, ***wordwrap control*** is improved, while in ***C mode syntax checking*** is extended, and a special Search option lets you search for function definitions.

Other ***new features*** are: • dynamic date insertion • Left and Right Justify • bracket matching • Align Columns and • the Char Info option.

...offers much to the user... a good deal of thought has evidently gone into its development...
... a worthwhile upgrade from Edit **Acorn User**

...replete with well thought out and flexible features... very attractive... remarkably inexpensive for what it offers... should prove very popular. **Archimedes World**

...a wonderful piece of software... deserves to be on everyone's icon bar... **Archive**

DeskEdit

is the ultimate all-purpose editor for the Archimedes, with special features for plain text, Basic and C source.

Edit your Basic programs on the desktop and test them inter-actively with a single

DeskEdit + 48 p.e manual + a function keystrip
Price **£24.95** inc + £2 p&p Code **PEDTb**

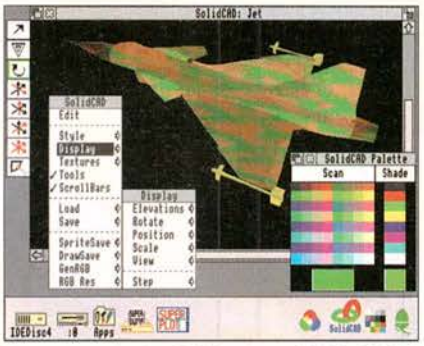
Existing users may upgrade to V. 1.20 by sending their original disc, together with £2.00 and SAE marked **DeskEdit Upgrade 1.2.**

RISC Developments Ltd. 117 Hatfield Road, St Albans, Herts AL1 4JS. Tel. 0727 40303 Fax 0727 860263

SILICON VISION

DESKTOP SOLUTIONS FROM THE PROFESSIONALS

SolidCAD ® Release 5.0



The most comprehensive 3D CAD package available for RISC OS. It is capable of generating the fastest 3D Rendering for any design. The Jet Fighter image above was rendered in less than 2 seconds. Includes a 3D Design Editor for drawing in Plan, Side, and Front Elevations, Texture Mapping, Printer & Plotter Drivers, 24 bit RGB output for the highest quality images, and a Realtime Graphics Language for the fastest programmable animation.
"very easy to use and extremely well documented if you get stuck" - Acorn Computing.

£99.95

FilmMAKER ® Release 5.0

The complete Interactive 3D Animation System. Ideal for users who wish to explore their creative talents without resorting to programming. FilmMAKER® boasts the fastest frame rendering rates, less than 2 seconds/frame for the Space Shuttle, and the smoothest flicker-free playback for animating your masterpiece. Fully compatible with SolidCAD® for designs & SolidsRENDER® for ray tracing, animation Oscars are now within your reach.
"Specifying the movements of objects is a dream" - BBC Acorn User.

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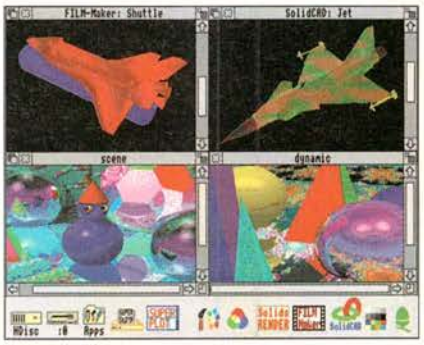
SolidsRENDER ® Release 5.0

The most advanced Ray Tracing package for RISC OS. It includes a unique Accelerated ray-tracing capability for the fastest Photo-realistic rendering possible. Use standalone or import SolidCAD® designs and FilmMAKER® flightpaths for Object orientated design and Animation capabilities. SolidsRENDER® also provides the most comprehensive object properties. Why wait hours when you can now produce better results in a fraction of the time.
"the fastest ray-tracer...outputting the highest quality images" - Archimedes World.

£99.95

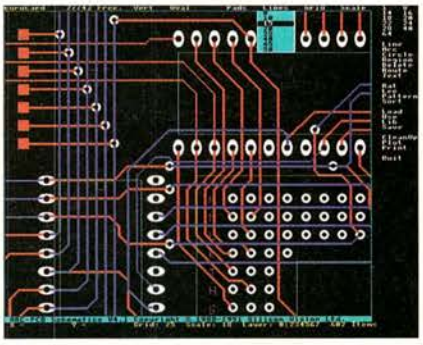
SolidTOOLS ® Release 5.0



The first fully integrated environment for 3D CAD, Photo-realistic Rendering, Interactive animation, Texture mapping, Programmable animation, 24 bit RGB output and high resolution hardcopy to printers and plotters. The system provides 3D CAD facilities for Architectural, Engineering, Interior design and Teaching CDT using the industry standard 3rd Angle projection for drawing in Elevations. The package includes SolidCAD®, FilmMAKER®, and SolidsRENDER® offering a turnkey solution satisfying all your conceptual design, and presentation requirements.
"Puts Silicon Vision at the Top of the CAD market" - Archimedes World.

£275

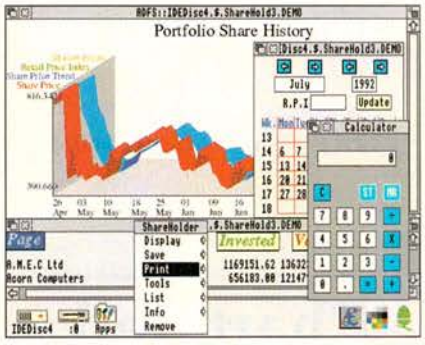
ARC-PCB™ Schematics v4.1



The most comprehensive Electronic Design Automation tools available for RISC OS. The range starts at ARC-PCB v1.7 for purely Digital PCB layout, graduating to ARC-PCB Professional v3.1 for combined Analogue/Digital PCB layout and ultimately to ARC-PCB Schematics v4.1 providing both Circuit Schematic drawing and all PCB layout features in one design interface. All versions include, Automatic Routing, Multiple layers, Component pulling, On-line Help, Drivers for Printers & Plotters, and up to 300,000 components. GerberPLOT & ExcellonDRILL options are £75 each.
"Performs up to professional standards." - BBC Acorn User.

£125 (v1.7), £275 (v3.1), £375 (v4.1)

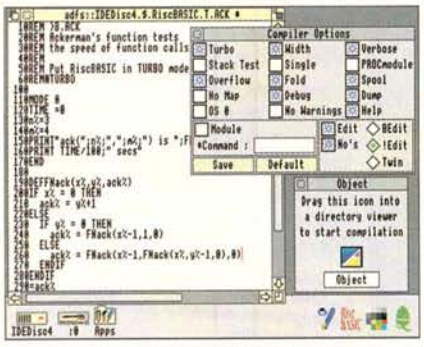
Shareholder™ Release 3.0



The complete share holder management systems providing all the facilities needed to automate your portfolio available in two versions. ShareHolder v2.0 features include Company statistics, Share holdings, Transaction processing, Portfolio history, Forecasts, Dividends due, Share price updates, built-in Calculator, Calendar and Hardcopy facilities for total integration. ShareHolder Professional v3.0 also includes Share trends, Retail Price index, General Market Prices and links to CEEFAX, ORACLE & PRESTEL.
"An excellent concept, the first professional share related package ... well thought through ... remarkably comprehensive" - Archimedes World.

£125 (v2.0), £275 (v3.0)

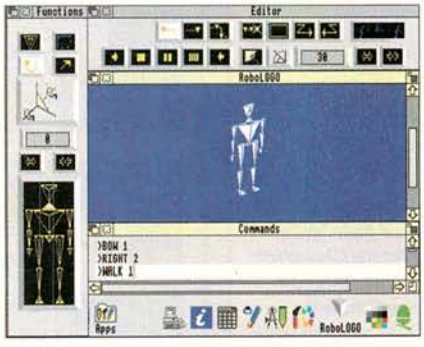
RiscBASIC™ Release 3.0



The complete software development system for producing sophisticated RISC OS applications. The unrivalled RiscBASIC compiler allows you to use the interactive development environment of interpreted BASIC for fast prototyping and interactive testing followed by source code security and the fastest machine code performance of final compilation.
"If you are looking for THE compiler to go for, and are confused about which one deserves to win the very public battle that has been raging in the advertisements, well my preference is for RiscBASIC" - RISC USER.
"Produced significantly more efficient code" - Acorn Computing

£99.95

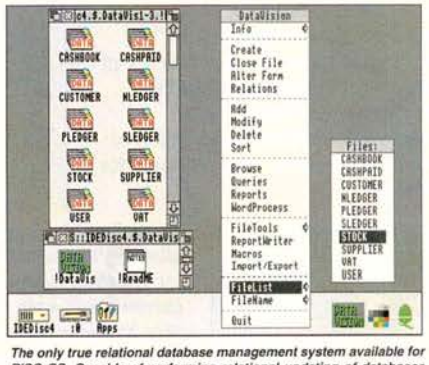
RoboLOGO™ Release 1.1



RoboLOGO provides the ideal introduction to computing. This new extension to traditional LOGO provides three dimensional control of an articulated humanoid or animal figure based on the standard LOGO language. Natural commands such as 'Walking', 'Bowing', and 'Picking', etc are automatically represented graphically by natural movements of the 3D figure which is readily understood by students. The traditional Turtlegraphics and 3D Glider features are also supported for students to explore their school work further.
"Takes Turtlegraphics and LOGO into a new dimension" - Educational Computing.

£49.95

DataVISION™ Release 1.3



The only true relational database management system available for RISC OS. Capable of performing relational updating of databases as well as the usual relational reporting features. This is all possible without resorting to programming. For advanced users a reports programming language is provided. Also includes Wordprocessing, Mailmerging, Label printing, Reports, Queries, Formula entry and Validation. Built-in security measures stop multi-tasking during relational database operations to maintain database integrity in the event of other programs crashing. Includes an accounting example to highlight DataVISION's power.
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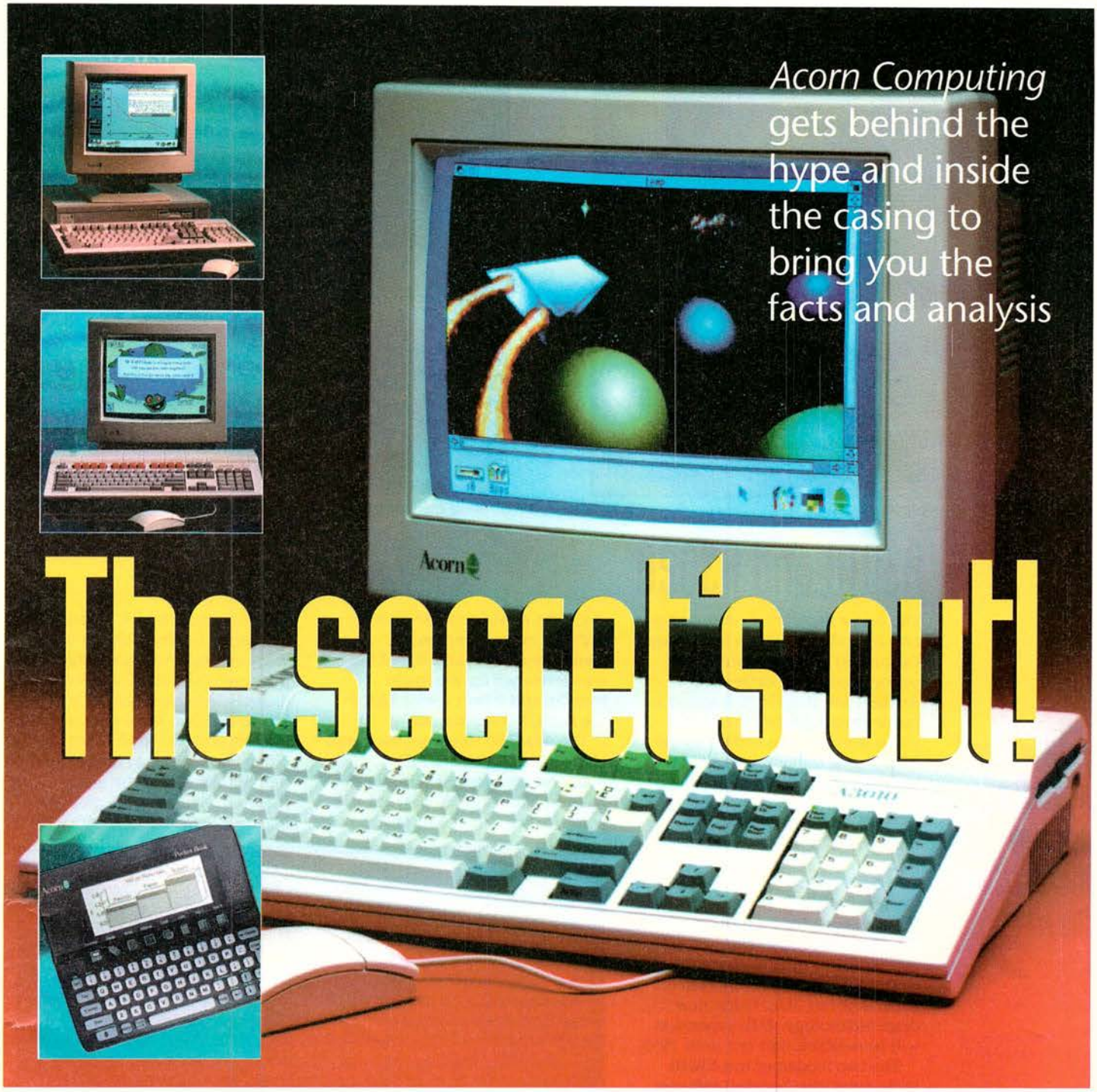


Mike Cook, Steve and Pam Turnbull put the new Acorn releases through their paces

ACORN have unveiled their largest ever crop of home and professional computers after months of speculation. The new machines all bristle with even more 32-bit power performance under the bonnet and are fuelled by hardware design innovation of the highest quality.

The Cambridge boffins gave *Acorn Computing* a special insight into not just one but four new computers, not just one release, but an astonishing 11.

Engineering excellence has delivered computers virtually on a single chip and other design features with enough expansion possibilities to feed the hungriest multimedia application.

Included in the releases is a new Risc OS version and there is even a pocket organiser to add to the portable that was released just recently.

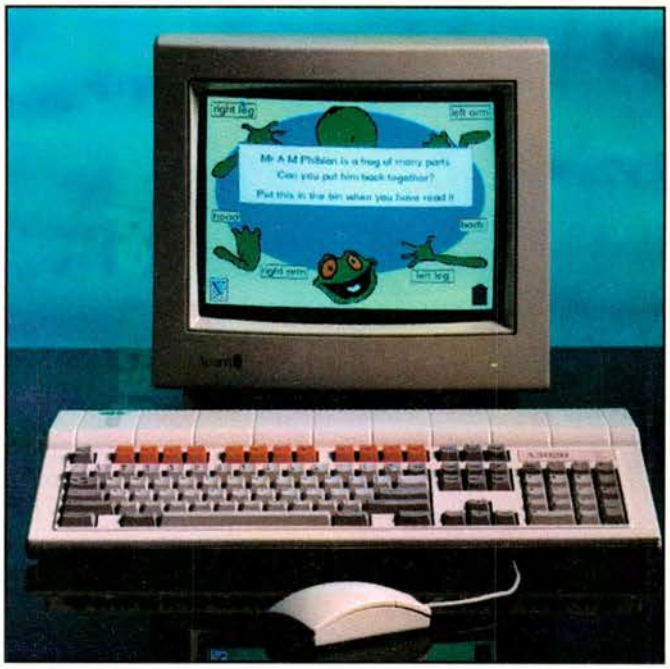
Internal changes at Acorn have led to manufacturing-led design and release of machines rather than the more usual R&D emphasis.

This fundamental change at Cambridge means that you can expect more releases but these will be evolutionary rather than revolutionary.

The Press, user groups and, most of all, the Acorn grapevine have had a bumper crop of rumours this year ranging from portables to consumer machines – now *Acorn Computing* reveals all.

➤

The A3010 has green function keys ...



... while the education-based A3020 retains red keys

A3010 and A3020

> Treat yourself and buy a machine that's state of the art

The major spotlight is on the plug-and-go updates to the A3000 range. Packing 40 per cent more power performance than earlier Archimedes, the A3010 is aimed at home entertainment users with prices starting from £499, and the A3020 with in-built networking capability for professional education users.

The A3010 is the first Acorn desktop machine which can be taken home, plugged in and used. You don't need a tape player, disk drive or monitor – it will plug into a TV and if you have a more modern portable with a Scart socket you'll get a monitor-quality display.

The A3010 comes with 1Mb but is expandable to 2Mb. Using new dram technology, 4Mb expansion will be available, but not until 1993.

The two models of the A3010 both come with bundled software – the Family Solution and the Learning Curve.

The first costs £499 including VAT and comes with the updated EasiWord wordprocessor and the game Quest for Gold. You also get an audio tutorial tape and a blank disk in addition to the usual applications and manuals.

The Learning Curve is priced higher at £799 but this does include 2Mb of ram, a colour monitor, PC Emulator with DR Dos 6 – now renamed PC Soft – in addition to the standard Learning Curve software, manuals and information.

The base machines use the new ARM250 chip rather than the ARM3 used in the A5000s – because of the size. The ARM4 and ARM5 never surfaced in the commercial computer market, and the ARM6 was developed for the Apple Newton and it isn't applicable to the Risc OS environment.

The ARM250 combines the entire chip set – ARM, VIDC, MEMC and IOC – on one piece of silicon and gives an additional 50 per cent raw performance over the ARM2 and is a 6mip (millions of instructions per second) rather than a 4mip machine.

Despite being composed of four separate units the ARM250 chip is smaller than just the ARM3 on its own so it's cheaper to produce and more reliable. This redesign accounts for considerably faster screen handling. For instance Mode 28 took 80 per cent of the processor time on the A3000 while on the A3010 and A3020 it uses just 20.

Physically the A3010 has a bi-directional parallel port, serial port, 2Mb floppy drive and, most importantly, an expansion slot for an extra circuit board. This can be connected to other devices such as video cameras, scanners, Midi instruments or an SCSI interface for daisychained hard disks, CD-Roms and so on. Two standard Atari-style joystick ports are at the back.

The most striking feature is the function keys – they're green – and the machine has a dark grey main body. The colours were concept designed and tested on the public at the Birmingham Education Show earlier this year. The styling is smooth, with the Acorn name and logo prominent and the function key strip is gone.

The floppy disk release button is also green and the reset button has been made smaller and is on the opposite side to the disk drive.

Your TV will decide the quality of the picture – and sound although the internal speaker still works – and reportedly best results come from a 14in portable Sony Trinitron which has a flat screen and Scart socket so ➤

Upgrade your 8-bit BBC Micro

The low-end machine – the A3010 – has everything the old A310 and A400 series had, apart from expansion slots, it's faster and has a better operating system. Compared to the original BBC Micro ... well, there's really no comparison.

If you own an 8-bit BBC Micro we want you to upgrade your machine. Why? Because you deserve the best for choosing such a good machine in the first place and because the £499 you'd have to spend now is equivalent to £250 in 1982 when the Beeb was first launched.

Treat yourself and buy a machine that's state-of-the-art and has a promising future.

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It took us some time to understand IDE, but then we started two years ago. If you've had problems with products from less experienced suppliers we'll do our best to help you pick up the pieces. We don't advertise what we can't supply. All the above are available as this goes to press.

Prices are for complete upgrade kits and exclude VAT. Carriage is free on UK prepaid orders. External options are also available. Not all interfaces yet include all of the *ideA'92* features – please check.

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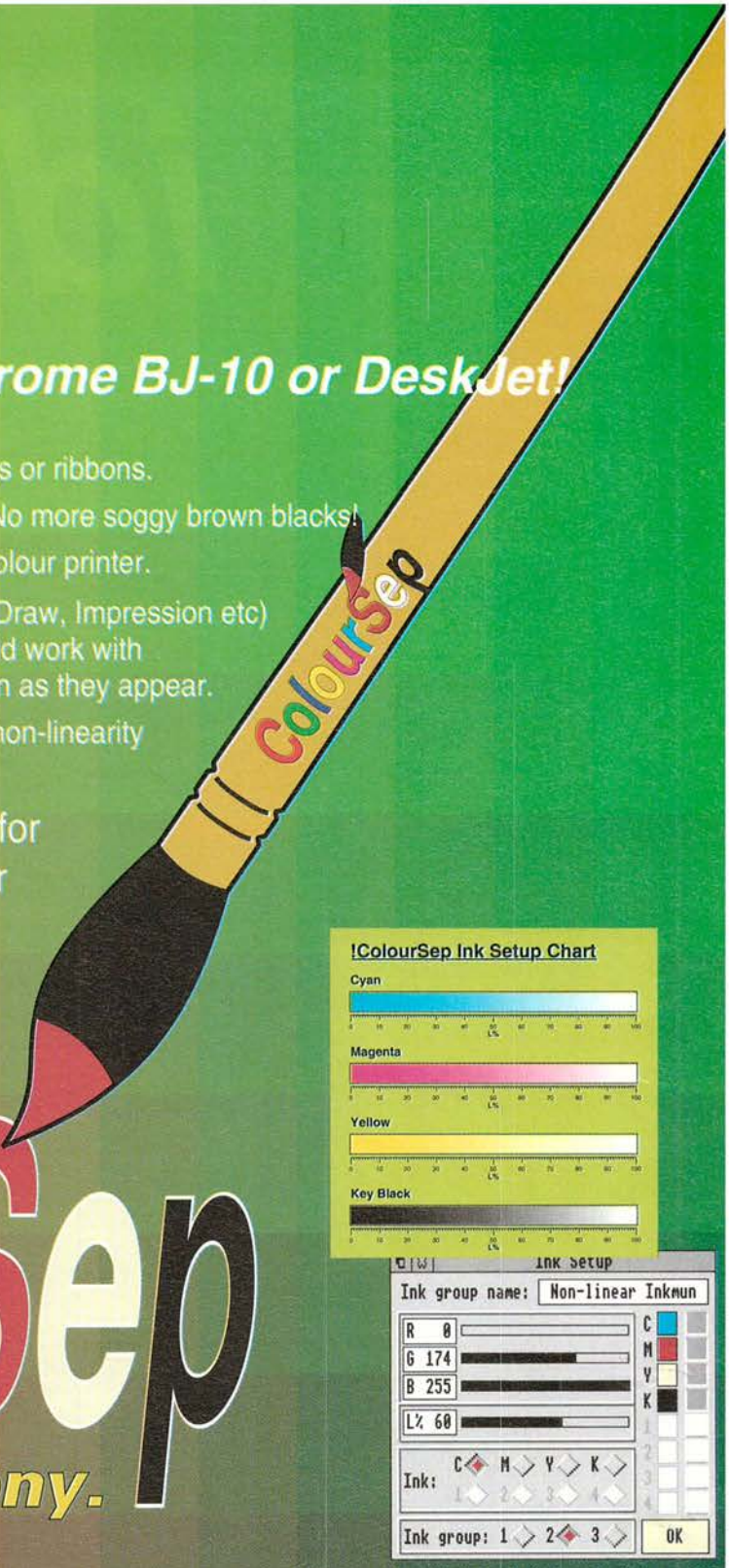
Results comparable in quality with print from a £2000 colour printer.

CMYK colour separation 'on the fly' using normal files (Draw, Impression etc) and standard RISC OS printer drivers. ColourSep should work with Computer Concepts' TurboDrivers – we'll check as soon as they appear.

Screen preview of colour separations. Fine tuning and non-linearity compensation to suit different inks.

Discover the excitement of colour printing for the first time, or improve the quality of your current work.



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Schools solution?

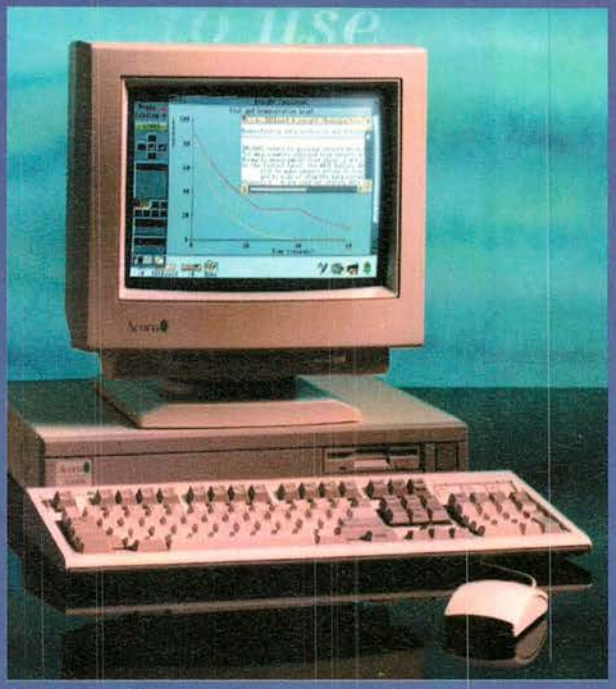
The A3020 is aimed at schools and is cream with red function keys though the styling is the same as the A3010. In response to requests from education the A3020 has internal network interface sockets and hard drive support built on to the circuit board.

You can therefore fit a hard drive and be connected to a network – Econet or Ethernet – with room to spare for a separate internal interface to be installed. It also starts with 2Mb of ram immediately upgradable to 4Mb.

Gone are the modulator and joystick ports of the A3010 to make room for the heavy-duty network capability. The HD60 A3020 model comes with 60Mb IDE hard disk. You should be able to fit any internal A3000 IDE drive, such as Ian Copestake's, to the new machine. But some companies overdid it on the dimensions so they'll have to bring out modified versions.

If you have a hard disk unit that's the wrong size you won't be able to transfer it to one of the newer machines. The ICS internal A3000 hard drive is the right size.

Both models of A3020 come with a colour monitor which for an extra £50 can be upgraded to multi-scan with prices to education starting at £649 plus VAT.



The A4000: Aimed at the design parts of the curriculum

A4000

Staying with education, but moving to secondary school needs, is the A4000 which is basically the A3020 as a three-box solution so has better expansion capabilities than the A3010.

Similar in appearance to the A5000 it is aimed at the CDT and design parts of the curriculum.

The hardware is the same as the A3020 apart from having an 80Mb hard drive.

Non-education users can buy the A4000 as the A4000 Home Office which in addition to the standard hardware and software comes with EasiWriter and Desktop Database for £1,173.

➤

you get a much better picture than via the modulator. Sanyo, Mitsubishi, Sony and Panasonic portables will probably do nearly as well.

The A3010 represents the biggest push into the home sector since the Electron. Acorn will be concentrating on marketing for this Christmas. Recently appointed Hugh Symons are the sole distributors with a brief to increase the High Street position of the Archimedes, with Dixons, Argos, John Lewis and the GUS group all stocking the new A3010.

Dixons have been criticised in the past for the lack of support they can give to computer customers. To offset this Acorn began a series of courses especially for key Dixons personnel in August.

A5000 enhancements

The specifications have changed slightly on the A5000 which now comes with a standard 2Mb of ram and an 80Mb hard disk – as opposed to the previous 40Mb – while there is also a 4Mb A5000 version with a 120Mb hard disk.

This model is aimed at DTP, multimedia, software development and image processing as well as other applications which demand large memory or disk space.

New to the range are two floppy-disk-only networking models – ideal client stations for Econet or Ethernet networks. They use the AUN – Acorn Universal Networking – which was previewed at BETT earlier in the year and provides transparent network access.

The AUN is a networking framework which lets you incorporate industry standards such as TCP/IP with the concepts of Open Systems and different types of computer. Ethernet and Econet networks can be linked together via a backbone Ethernet network using the A5000 as a gateway which acts as a local fileserver too.

To enhance this Acorn have released an updated version of their Level 4 Fileserver networking applications to give more speed and an industry-standard cabling system – existing systems can add the new cables to make one integrated network.

Upgrading with Risc OS 3.1

Nearly a year after the launch of the A5000 Risc OS 2 owners can now upgrade their Archimedes with Risc OS 3.1. As suspected, the delay was caused by working out how to cram it all into a 1Mb machine.

Screen redraw and window management have been concentrated on as they are used the most. This gives the overall perception that you can get more done but in reality some actions are faster and others slower.

According to Acorn there are over 300 enhancements over Risc OS 2, but some of the most useful are the multi-format disk support and that many of the most important applications are instantly available because they're on board all the time.

Acorn have made a point of selling this upgrade as cheaply as possible. The possibilities fall into the following categories:

● Risc OS Upgrade Kit A3000	£89 – £49 until mid-1993
● A5000 Upgrade	£19
● Hardware upgrade 300/400 series	£30

The hardware upgrade option for the 300 and 400 series will be a dealer fit and Acorn are hoping for a 70 per cent uptake in the first year.

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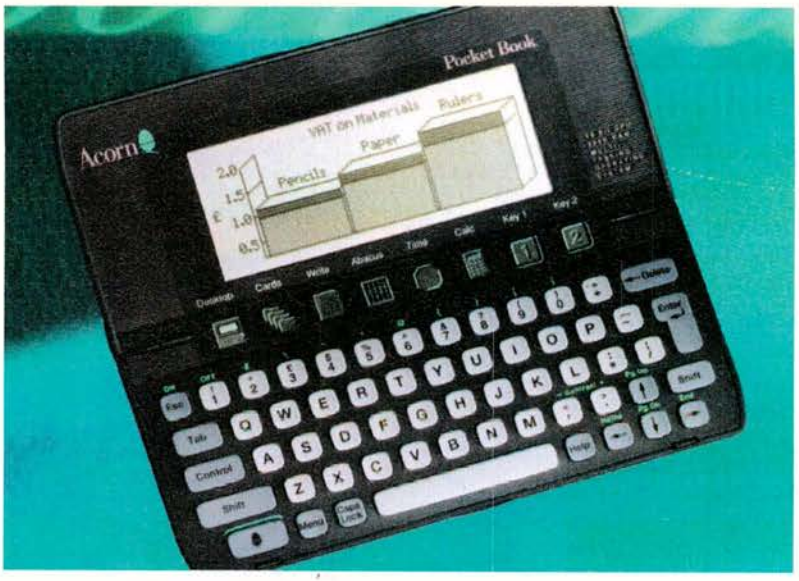
The Acorn Pocket Book



The Acorn Pocket Book ... a real secret

Probably the best kept Acorn secret, this is another first for Acorn, as it is not one of their own machines but a badged Psion Series 3.

Psion are well regarded for their Organisers and have been in the hand-held business a long time. This experience has led to the creation of the clamshell Series 3 whose design and capabilities have been well received in the PC marketplace.

The hardware is identical apart from the touch function keys placed along the hinge. The Acorn model gives you fingertip access to the Desktop, Cards, Write, Abacus, Time, Calc and two other unspecified keys, one of which will probably be a spell checker.

Saved filenames are listed under the relevant applications on the Desktop and the cursor keys will give you access to them. The only difference between the Psion 3 and the Acorn Pocket Book is this software, which has been rewritten by Acorn.

The external dimensions are 6.6 x 3.3 x 0.9in and it weighs in at 0.75lb. This model goes some way to meeting the requests from education – what they would like is an A5000 just this size – and is priced to be cheap enough for parents to buy.

Basically a jotter and organiser, it would be useful for recording information which can then be ported to other machines.

Acorn say that loading software is being developed to allow spreadsheet, database and text files to be imported directly into your usual desktop Archimedes applications complete with styles.

When you attach the Pocket Book via the fast serial port link – access at 1.54Mbits/sec – the Archimedes views and uses it as another disk drive. It also has a parallel printer link which includes built-in support for Canon bubblejets and Epson printers.

You can add other applications such as a diary through the two solid state drives. These handle flash cards which are 2Mb write-only disks or battery-backed Ramdisks with a capacity of up to 1Mb.

Unlike the Psion systems there is only one model which has 256k and the price is £249.95, though schools are eligible to a special education price and an 11 for the price of 10 deal. Power comes from two AA batteries which will provide up to four months of usage or 80 hours of continuous use.

It's a useful little machine whose tiny 53-key qwerty keyboard is great for little fingers or one-finger notetaking. The Pocket Book will let many people prepare the groundwork on the move and may be a better solution for some than the A4. But for true word processing the proper keyboard of the A4 is a necessity.

What next?

Acorn themselves talk about a *continuum of machines* and a *cohesive coherent range* when there is no longer a large gap between machines. But are they taking a risk by releasing so many machines and offering such a wide choice?

In the current recession Acorn are doing quite well and feel confident about their new impetus. They are aware of the potential risks, but plan to target specific groups with solution machines/packages rather than letting the products find their own position and letting the technology sell itself. This is another new departure for Acorn, and one which is long overdue.

The implications from the release ➤

> Psion are well regarded for their Organisers and have been in the hand-held business a long time

The Archimedes family – positioning

Model	Price inc VAT	Chip	Floppy	Hard disk	Expansion slot	Ram	Network provision	Joystick interface	UHF TV Modulator	Monitor	Third Party Software	Target Market
A3010 Family Solution	£499	Arm 250	2Mb	N	Y mini	1-4Mb	N	2	Y	N	Y	Home
A3010 Learning Curve	£799	Arm 250	2Mb	N	Y mini	1-4Mb	N	2	Y	Y	Y	Home
A3020 HD60	£1,115	Arm 250	2Mb	60Mb	Y mini	2-4Mb	Y	N	N	Y	N	Education
A4000	£1,115	Arm 250	2Mb	80Mb	Y mini	2-4Mb	Y	N	N	Y	N	Secondary education
A4000 Home Office	£1,173	Arm 250	2Mb	80Mb	Y mini	2-4Mb	Y	N	N	Y	Y	Home/small business
A5000	£1,643	Arm 3	2Mb	80Mb	Y x 4	2-4Mb(8)	Y	N	N	Multi-scan	N	Education and teacher training
A5000 Learning Curve	£1,699	Arm 3	2Mb	120Mb	Y x 4	2-4Mb	Y	N	N	Multi-scan	Y	DTP/image processing
A5000 ES	£1,299	Arm 3	2Mb	N	Y x 4	4Mb	Y	N	N	Multi-scan	Y	Econet network station
A5000 NS	£1,399	Arm 3	2Mb	N	Y x 4	4Mb	Y	N	N	Multi-scan	Y	Ethernet network station

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80Mb IDE Hard Drive	£250.00
120Mb IDE Hard Drive	£299.00
240Mb IDE Hard Drive	£480.00

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RISCOS 3 now available £49 inc VAT

Miscellaneous Drives

44Mb External Cartridge Drive	£450.00
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Cumana External CDROM Drive	£399.00
A3000 60Mb HardCard - Internal	£349.00
A3000 80Mb HardCard - Internal	£435.00

*All prices exclude VAT

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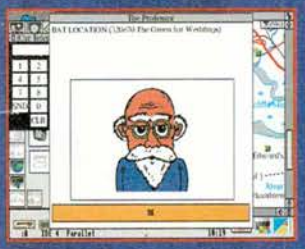

- ★ Hadrian's Wall
- ★ Roman Times
- ★ Mary Queen of Scots
- ★ The Solway Firth
- ★ Bonnie Prince Charlie
- ★ The Civil War
- ★ Victorian Britain
- ★ Railways
- ★ Timeline from 43 A.D. to May 1991
- ★ The Border Reivers
- ★ Map Reading
- ★ Decision Making
- ★ Genealogy
- ★ Poetry and Language
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"Frontier 2000 is a superb pack. the trails are entertaining and informative, whether used at home or at school" ***Roger Frost, The Micro User, June 1992***

FRONTIER 2000

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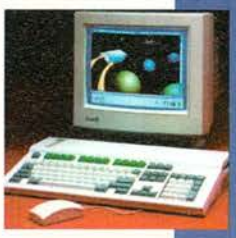
Tel: 0480 67945 Fax: 0480 496442

Risc OS, 2Mb Min Req.

CD Rom (Risc OS) version available Please contact us for information

The inside story By Mike Cook



When I approach a new computer I always like to use a screwdriver because a look under the lid will often reveal something that is normally hidden, as proved to be the case here.

The first thing you notice on removing the plastic case of the 3010 or 3020 is that it is enclosed in a metal box. This is to comply with the RFI – Radio Frequency Interference – regulations.

Although our government has won a stay of execution and we do not have to comply with them for five years, Acorn have implemented full RFI screening.

All credit to them, as I remember the first Master Compact I saw had spaces for RFI suppression components but they weren't fitted.

One of the problems with getting a computer RFI proof is the access points. I was glad to see that this had been properly addressed with metal fingers surrounding all such points.

The screening means that there will be much reduced interference to nearby TV sets and radios. Computers can also cause interference to hi-fi units and personal stereos. The metal screening also gives the computers a heavy, solid feel that is quite refreshing.

The major star of the insides was the integrated ARM250 chip. This is a combination of an ARM2 processor, VIDC video controller, IOC input output controller and a MEMC memory management controller. In other words a single computer on a chip.

All this is squeezed into a package that is smaller than the original ARM chip.

As well as integrating all the functions they have also laid it out using a different IC manufacturing technology. This has made it much cheaper to make with the bonus of improving performance.

These chips run at 12MHz rather than the original 8MHz. This, coupled with a different type of random access memory, gives about a 40 per cent increase in performance over the earlier Archimedes computers.

The two roms that hold the operating system are 16-bits wide in conventional 40-pin packages looking like the old 8-bit processors. The ARM chip itself is a surface mounting device along with a number of other components. The rams use the new half size spacings of 0.05s and there are edge sockets for ram upgrades.

The audio circuitry is on a sub-assembly at right angles to the board and uses thick film technology. This is a technique not used in Acorn computers before and consists of a wafer of ceramic material with screen printed deposits of aluminium and carbon to act as connectors and resistors. A surface mounted amplifier is in the centre with some chip capacitors and resistors. This construction technique should ensure that the sound system is free from interference pick up from the digital components of the computer.

The power supply represents a departure from normal Acorn practice as it is built on the main printed circuit board. However, for safety reasons it is well shielded in another metal box containing only small ventilation holes.

Due to the reduced power consumption of the components it is smaller than half the size of the original Model B power supply.

The printed circuit board is common to many of the models and is four-layered: Where signal tracks are on the top, bottom and inside the board, there is a layer distributing the power and a whole plane of earth connections. This helps to prevent signal deterioration and allows the computer to be clocked faster.

I did hear that they tried to make a two-layer version but it wouldn't work and so they had to go to the more expensive four-layer system. However, there is plenty of room on the board and comparatively large areas have no components.

Perhaps the biggest surprise was what looked like an ordinary transistor – but it was mounted in a socket. This is the serial number ID chip.

All the computers will have a unique serial number built into them. This could be used for many purposes when the software is written.

For example suppose you had a computer stolen and this computer was then used to access a bulletin board. The software in the bulletin board could request a read of the serial number, look it up on its own list of stolen computers and if found instigate a phone trace of the calling number.

All this could be done before log-on and before a thief knew anything about it. The other possible use is that software could be registered to individual machines making it more difficult to make illegal copies and remove the need for dongles.

There is a great economy in manufacturing here as all the Arm 250 machines use exactly the same printed circuit board. The different models are simply populated differently.

This new range of computers finally proves that as well as producing innovative concepts in computers, Acorn now have – finally – the engineering and manufacturing skills necessary to cash in on their innovations.

➤

of this range and its positioning are that next year will see a similar treatment being dealt to the higher Archimedes and Unix ranges.

This is when we can expect work on the VIDC and hopefully true 24-bit colour capability – there's no necessity to stop at the 8-bit colour halfway house.

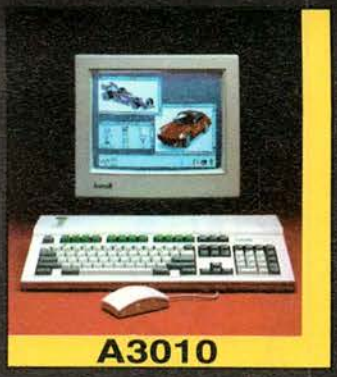
Acorn will admit that – with hindsight – the VIDC system was a mistake as it tied the Archimedes to a specific system. The less innovative PC was constructed in such a way as to allow the video card to be upgraded and to adapt quickly to new technologies.

We can still expect innovations from Acorn but it appears that, at long last, they are aware of the larger picture.

Big and better machines are in the pipeline but the utilisation of existing technologies as well means that we can expect a wider range of Acorn machines than ever before.

With new concepts on the way downward compatibility may be a hindrance, so you can look to emulation rather than true hardware-compatibility in future too.

● *This product launch sees so many departures from Acorn's normal behaviour that it seems that the company have finally got the message and their future is rosy. Watch this space for details.*



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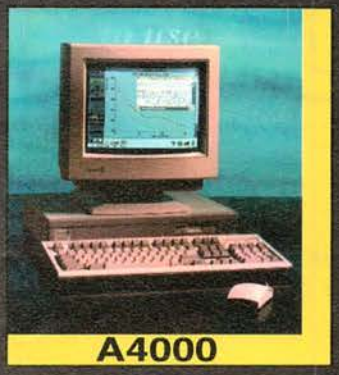
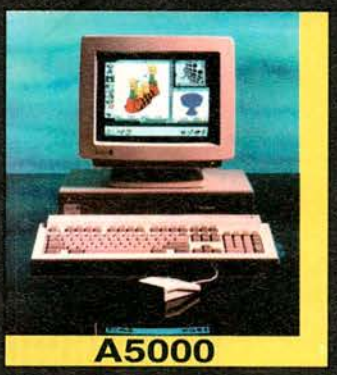


PRES FOR



'MICRO-TRADER' BUSINESS SYSTEM

'Micro-Trader' consists of a powerful range of computer programs to meet the many needs of the small to medium sized business.
'Micro-Trader' provides professional integrated accounts that have been designed by a businessman to meet the needs of the businessman.
'Micro-Trader' has been specially developed for multi-tasking operation under RISC-OS on the A3000, A5000 and Archimedes computers.

'MICRO TRADER' FEATURES

- Integrated SALES, PURCHASE and NOMINAL LEDGERS
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- Double entry accounts with Audit Trail and Trial Balance
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What's been said about Micro Trader

The forms are masterpieces of good layout and the handbook is comprehensive and well written-*MU May '92*

"It is powerful, flexible and certainly a pleasure to use."
Acorn User June '92

The Micro Trader System is so flexible and easy to use... who says accounts can't be fun? I have really enjoyed using the system on the Archimedes"
- A Yorkshire commerical user

"Micro Trader offered me all the facilities I required with easily understandable commands at a very reasonable price, especially compared with other PC packages - I am very pleased to say not only is the system excellent but the help and prompt after sales service has been first class- *A Berkshire User*

The system manual is excellent... it is both comprehensive and easy to follow"
Acorn User June' 92

"... working well. My accountant was very pleased with the display on the monitor and the figures on the reports" - *A Devon user*

"The package was obviously designed by someone with a experience at the sharp-end of book-keeping and acconts" - *Acorn User June '92*

THEY CAN'T BE ALL WRONG

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ARCHIMEDES DISC RESCUE

At last, Archimedes disc owners can repair their discs quickly and easily! The Archimedes Disc Rescue package is specially designed to repair and recover both hard drives and floppy discs on most Archimedes filing systems e.g. ADFS, SCSI, RamFS, IDE, etc. It includes three easy-to-use utilities and a sophisticated disc editor for more confident users. All the programs are well documented in the accompanying manual which also contains a disc repair primer to guide users through the repair and recovery process.

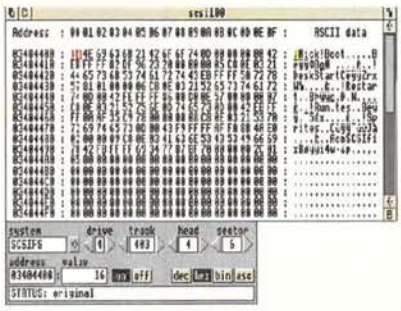
Easy-to-use Utilities

!RepairDir Either select the appropriate filing system and drive number (for root directories) or drag a broken directory onto the icon bar for reconstruction and repair.

!Recover Simply drag a corrupted file or directory onto the icon bar to recover data onto a healthy disc. Alternatively, supply a disc address to recover deleted files or directories.

!FixMap Just select the appropriate filing system and drive number to repair a bad disc map.

A Sophisticated Disc Editor



This program provides a host of facilities to help users navigate, edit and repair Archimedes discs. Here are a few of the features that it provides:

- easy disc navigation with the 'goto' option
- fast, multi-tasking disc searching
- exports/dumps single sectors or a marked block of sectors
- imports files onto any position on a disc
- accesses non-Archimedes disc formats e.g. DFS, IBM, etc
- checks/recalculates boot sector, map and directory check bytes
- reconstructs and repairs boot sectors, maps and directories

Comprehensive Documentation

The manual is over 90 pages long and contains six chapters. These cover installing and running the programs, taking precautions, a disc repair primer, a detailed description of the disc editor and an in-depth explanation of the Archimedes disc formats.

RISC OS Compliant

All the programs in the Archimedes Disc Rescue package have been especially designed to run in the RISC OS desktop environment and are fully compatible with RISC OS 3.

Reviewed

"It dramatically reduced the time for me to retrieve lost files from a disc, and was able to cope with a range of dead discs."

Risc User, May '92

"... a well written, highly usable suite of utilities with a window-based disc editor at the core and an excellent manual."

Acorn User, July '92

"In practice, it works very well and the disc editor is one of the best I have seen on any machine."

Archimedes World, August '92

"For people who want to get to the nitty gritty of repair work..."

Acorn Computing, October '92

Now available for the Archimedes at only £35 (all inclusive) – cheques & postal orders only
LOOKsystems, 47 Goodhale Road, Bowthorpe, Norwich NR5 9AY. Telephone: (0603) 764114.

MegaDisk menu

Two great programs this month

NEW

Getting started

The programs on this disk are stored in a highly compressed format which sometimes enables as much as 1.6Mb of programs and data to be stored on a 800k floppy disk

The procedure for running the programs is very straightforward and does not require learning any special methods or techniq-ues.

Switch on your Acorn micro, put the disk in the drive and click the drive icon. The software that unpacks the programs, ArcFS 2, loads automatically ready for use. Double-click the Acorn Computing icon, the screen switches to the Acorn Computing logo and then, after a few seconds, back to the Desktop but now there's another window available.You can treat this new window just like any other one for viewing disk contents, you can run programs and open directories just by double-clicking them.

We recommend that you always read the !ReadMe files or access the help information via the Filer menu. See your Risc OS manuals for details.

Faulty disk

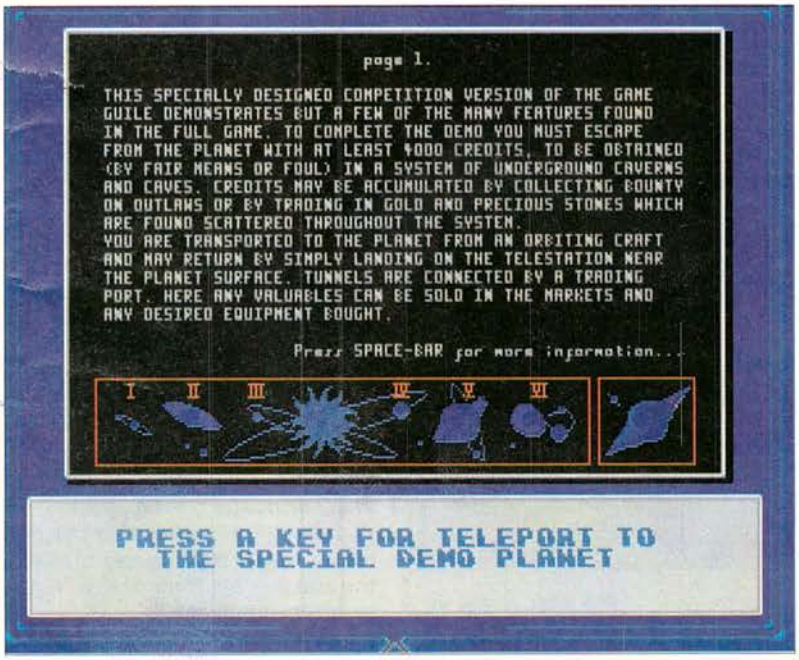
The cover disks are thoroughly tested at every stage of production, but inevitably when such a large batch of disks are duplicated, one or two bad ones will slip through, If you recieve a faulty disk it will be replaced free of charge. Send it with your name and address to:

TIB
36 – 50 Adelaide Street,
Bradford, BD5 0EA

If you damage the disk yourself, send it to the same address, but include a cheque or postal order for £1 (5.25in disk) or £1.50 (3.5in disk). If the disk has been damaged in transit, please return it to:

Europress Direct, Freepost, Ellesmere Port,
South Wirral L65 3EB.

Guile...flight from the tunnels


page 1.
THIS SPECIALLY DESIGNED COMPETITION VERSION OF THE GAME GUILE DEMONSTRATES BUT A FEW OF THE MANY FEATURES FOUND IN THE FULL GAME. TO COMPLETE THE DEMO YOU MUST ESCAPE FROM THE PLANET WITH AT LEAST 4000 CREDITS, TO BE OBTAINED (BY FAIR MEANS OR FOUL) IN A SYSTEM OF UNDERGROUND CAVERNS AND CAVES. CREDITS MAY BE ACCUMULATED BY COLLECTING BOUNTY ON OUTLAWS OR BY TRADING IN GOLD AND PRECIOUS STONES WHICH ARE FOUND SCATTERED THROUGHOUT THE SYSTEM.
YOU ARE TRANSPORTED TO THE PLANET FROM AN ORBITING CRAFT AND MAY RETURN BY SIMPLY LANDING ON THE TELESTATION NEAR THE PLANET SURFACE. TUNNELS ARE CONNECTED BY A TRADING PORT. HERE ANY VALUABLES CAN BE SOLD IN THE MARKETS AND ANY DESIRED EQUIPMENT BOUGHT.
Press SPACE-BAR for more information...
I II III IV V VI
PRESS A KEY FOR TELEPORT TO THE SPECIAL DEMO PLANET

THIS specially designed competition version of Guile demonstrates a few of the many features found in the full version. To complete the demo you must escape from the planet with at least 4,000 credits, to be obtained (by fair means or foul) in a system of underground caverns and caves.

Credits may be accumulated by collecting bounty on outlaws or by trading in gold and precious stones which are found scattered throughout the system.

You are transported to the planet from an orbiting craft and may return by simply landing on the telestation near the planet's surface – the one by which you enter.

Tunnels are connected by trading ports. Here any valuables can be sold in the markets and any desired equipment bought. The ship's computer, on the right side of the console, gives useful information on ordnance, cargo and sensor data. To toggle between mouse and keyboard control use the Control menu on this display.

Up arrow	Move up menu
Down arrow	Move down menu
Return	Select menu or function

The two bar graphs around the central targeting display show fuel levels (yellow) and shield energy (green). A plan view of the surrounding tunnel is shown on the left of the console. Your credit rating is displayed bottom right.

The ship can be controlled by mouse or keyboard, using these controls:

Mouse	Action	Keyboard
Select	Thruster on	A
Menu	Thruster off	D
Adjust	Fire cannon	S
Forward	Rotate down	Keypad 8
Backward	Rotate up	Keypad 2
Right	Rotate right	Keypad 6
Left	Rotate left	Keypad 4
	Reverse direction of view	V
	Matter transfer	Tab
	Pause	P
	Quit	Esc

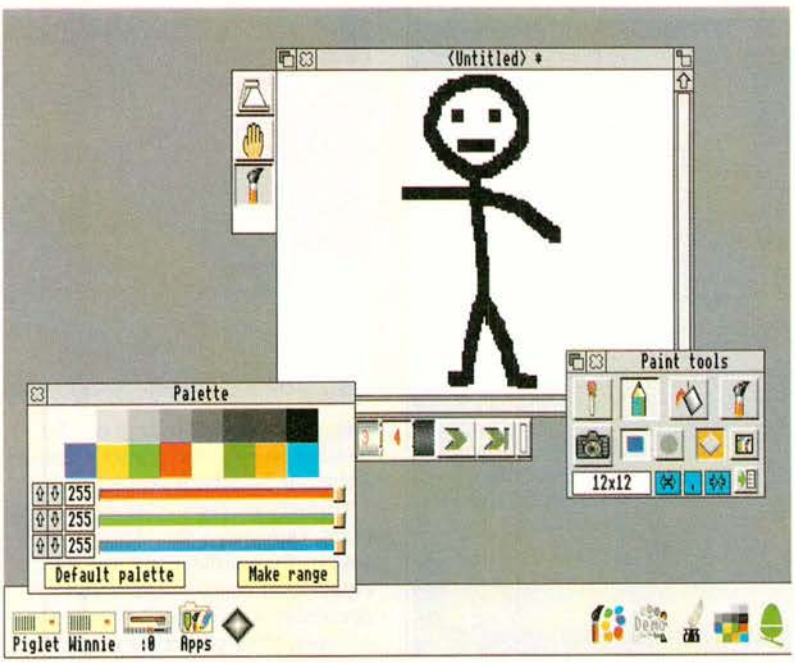
As you progress down the first of the two tunnels you pass over one gold ingot and a green gem stone. To pick up gold and gems you must hover close over the object and hold down Tab until the item is collected – this uses up shield energy. It is best to leave these at first and make your way to the trade port at the far end of the tunnel. Enter the port by landing – not too heavily – anywhere on the grey platform area.

In the trade area select the workshop and buy a controller which will ease flight control by maintaining the craft at a constant altitude. You can exit back to the first tunnel by pressing Return, or teleport to zone 2 by entering the teleport. All the teleports in zone 2 will transport you to zone 1 and vice versa. Doors are opened by shooting at the nearby green plinth.

Details of the competition can be found within the program.

Andrew Martin, Dream Ltd.

Animation ... move over, Walt



ON the cover disk this month, is a demonstration version of Image Animator, the great animation package from Iota Software. The restricted demo copy will let you play back films of any length, so you can look at the ones included on the disk, and you can try it for yourself, making films up to 10 frames long.

To play the example films supplied on the disk, simply double-click on them and then press the play button at the bottom of the window that appears. Here are some simple techniques for creating your own films.

Let's take a look at how a short animated sequence can be constructed in Image Animator. Double-click on the Animator icon and wait until it installs on the icon bar. To start a new film click on the iconbar icon.

Then click on the tools on the left, the brush and the palette icon below it. This brings up two new windows: The Paint tools and Palette. Start by drawing a stick man, select the pencil tool – you may want to use the out-facing arrows to make the nib bigger.

Draw the stick man with both arms straight out. Now press D, which stands for Duplicate, to create the second frame. Using Adjust rub out one of the stick man's arms and draw it again slightly dipped. Repeat this process taking four to eight frames to draw the arm moving from straight out to dropped fully down.

Now select Yo-yo from the motion menu and start the film running by clicking the play button. You can stop it by clicking on the frame number window. Single stepping through the frames is achieved by clicking on play with Adjust.

To make the stick man bounce a ball, pick the brush tool from the

Paint tools, click Menu over the tools window, move down to the Brushtip sub-menu and select RedBall.

Move to frame one, position the ball just underneath the stick man's hand and click Select to paint it. Move forward one frame and place the next ball and so on. Position the ball so that in the last frame it has actually hit the ground.

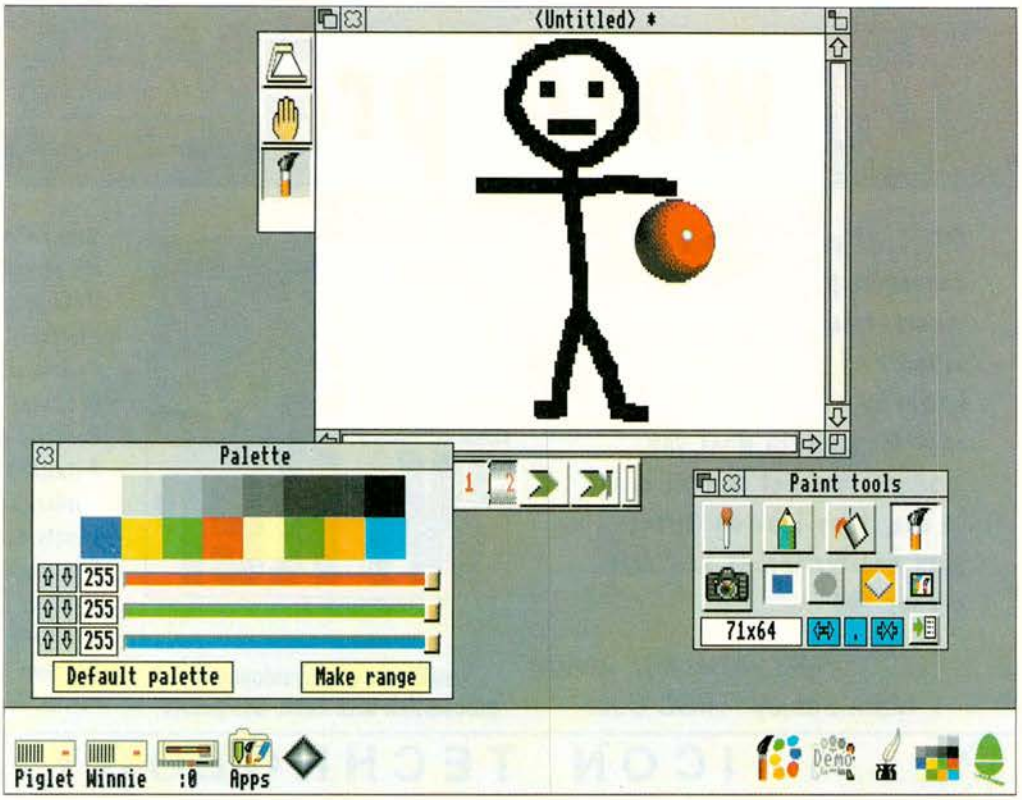
For added realism you could use Animator's brush resizing. Hold down the Shift key and resize using Select, to squash the ball as it hits the ground. Look in the examples directory at the StickMan example to see the end effect.

A whole film of a bouncing balls could be made in this way simply by moving and distorting the Redball brush. Animators use techniques such as distortion to make objects appear to be made from different substances such as rubber.

The way in which an object moves can also make it appear to be as different as a cannon ball and a balloon. Have a look at the Balloon and CannonBall example on the examples directory.

Films can also be made by dropping sprites on to Image Animator. The sprites in the file blink are of a pair of eyes blinking.

Drag the file to Image Animator's icon on the icon bar, to convert them to a film. Again choose the Yo-yo option to play this film. You may like to try altering this film by drawing highlights on the pupils. You can also try dragging on the film strip below the film to make the eyes open and close yourself.



Animator can provide hours of fun and, as an *Acorn Computing* reader, you can get a 20 per cent discount off the real thing.

All you need to do is send this page with your order, or a photocopy of it.

Adrian Critchlow, Iota Software Ltd.

5.25in and 3.5in disk offer for BBC Micro users

To celebrate the first issue of *Acorn Computing*, we are making a special offer available to readers with a BBC Micro.

We will be happy to replace this month's *Acorn Computing* coverdisk with either a 5.25in or 3.5in BBC Micro disk. All you have to do is detatch the disk in its bag and return it, together with the form below, enclosing a 50p coin to cover part of the cost of post and packing.

***Important:* Please note that the replacement disk you receive will not include Guile or Image Animator as these programs are not available for the 8 bit BBC Micro.**

● *Offer available only within the United Kingdom*

ORDER FORM

Please send me a BBC disk as indicated below.

Tape your 50p coin here

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BBC disk format required: ☐ 40 track 5.25in BBC disk ☐ 3.5in BBC disk

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Closing date of offer is October 16, 1992. Please allow up to October 30 for delivery.

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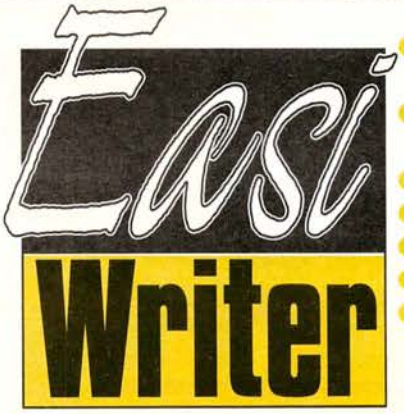

EasiWriter was developed in association with Acorn Computers

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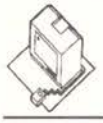

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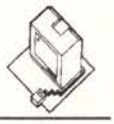

Up-to-the-minute Acorn product news!

Archive was first to publish full technical details of the A5000.

Archive was first to publish full technical details of the A4.

If you want to be the first to know, fill in the form below.

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Please send me details of Archive magazine and Acorn's latest products. (MU)

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EXCLUSIVE SUBSCRIBER DISC FOR BBC USERS

When you subscribe to Acorn Computing as a BBC user, you receive a special package of software designed to entertain and help you continue to get the most from your Beeb.

This month's exclusive subscriber only package contains two games, a cashbook organiser to keep track of household and personal expenditure and an interesting random landscape generator.

One of the games, Myriapod is very different from the run of the mill featuring a strange stringy creature battling against the elements to find vital food supplies. More entertainment comes from Godzilla's Hols where your space titanium bandwagon battles against time to save the Earth. Have great fun with the disc - we look forward to bringing you more great BBC software from Acorn Computing next month.

BBC subscription special!

Four great programs on your disk this month

Godzilla's Hols: A chance in a million

THE unthinkable has happened, Godzilla and the others from Monster Island have gone on holiday to a parallel dimension, leaving the Earth undefended.

The evil Amigans and their allies the rather nasty Atarians have seized their opportunity and launched an all-out attack on the planet Earth.

The Earth's conventional defences are powerless against the alien might, and the only chance is that the Earth's newest battle vehicle, the Mecha-Worm, can be completed and despatched to confront the evil alliance.

The Mecha-Worm is a space-titanium battlewagon, the most advanced fighting machine ever constructed.

Unfortunately it has no power at present. Therefore your task is simply to collect enough power pills to activate the beast and hence save the Earth.

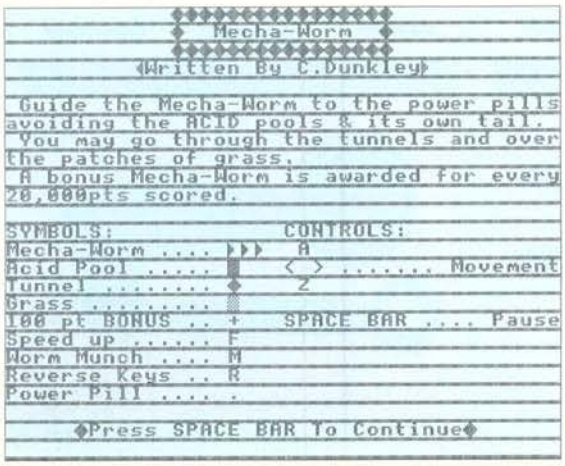
Along the way you will encounter strange deadly acid pools and patches of grass and tunnels which mutate as you pass over them. There are tokens to speed up the game, reverse the keyboard controls and eat most of your worm.

One of the important features is that the screen has wraparound – if you go off one side you come back on the other.

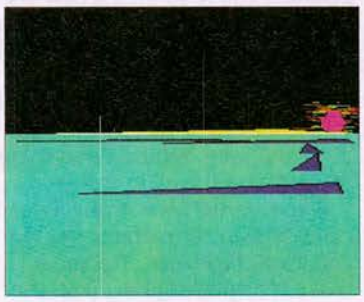
This might seem like an advantage, but when the screen is covered in acid pools and your Mecha-Worm is getting a bit long it's not so useful.

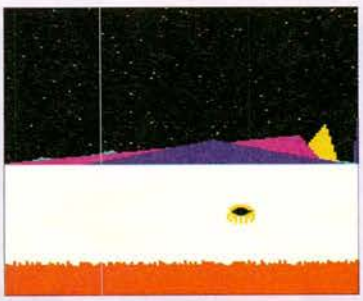
The game has been written in Mode 6 and uses only standard Basic instructions – no clever peeking or poking, and even has an adjustable speed to allow for customisation on different machines. It should work happily on all machines.

A special version called MW2 is also on the disk. This does use clever tricks and will only work on the BBC B and Master series.


Mecha-Worm
Written By C.Dunkley
Guide the Mecha-Worm to the power pills avoiding the ACID pools & its own tail.
You may go through the tunnels and over the patches of grass.
A bonus Mecha-Worm is awarded for every 20,000pts scored.
SYMBOLS:
CONTROLS:
Mecha-Worm .... A
Acid Pool ..... < > ..... Movement
Tunnel ..... Z
Grass .....
100 pt BONUS .. + SPACE BAR .... Pause
Speed up ..... F
Worm Munch .... M
Reverse Keys .. R
Power Pill .... .
Press SPACE BAR To Continue

Elysian fields: New worlds





THIS is an excellent little program that generates random landscapes based on a random number that you feed in.

It starts off by positioning the horizon line, which can be in a variety of positions on the screen, then the decision is made whether the ground is solid or reflective – water.

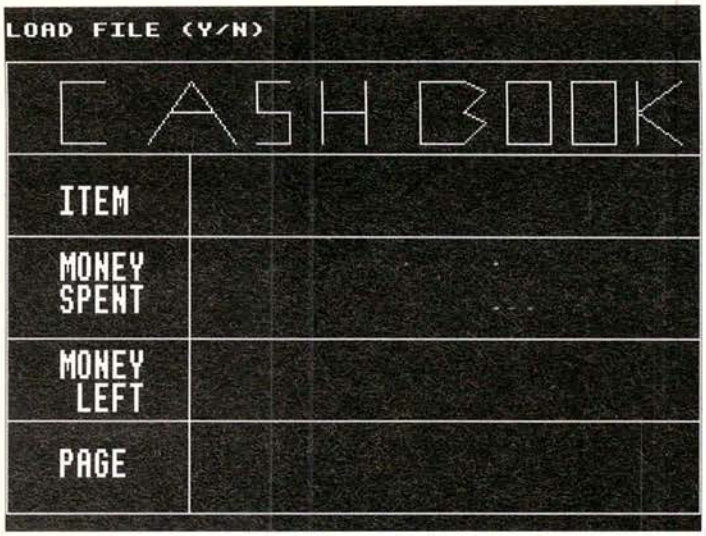
There are three varieties of sky: Sunset, ordinary sky or space, which will include stars. Different types of hills may appear on the horizon line, or none at all.

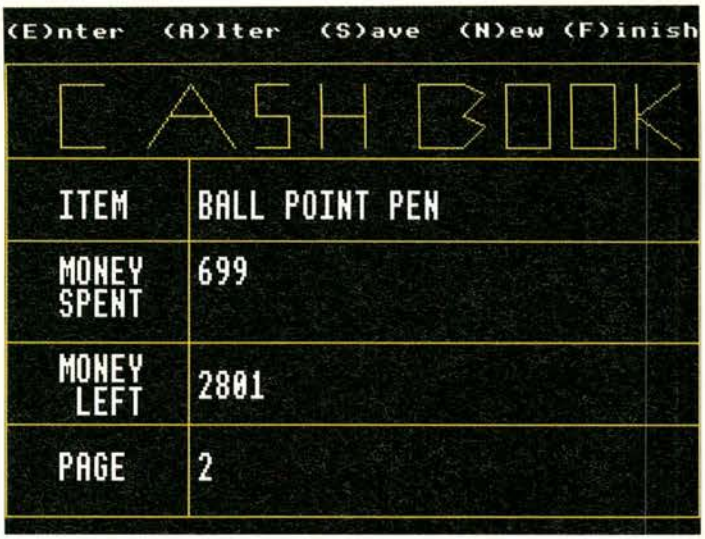
Rocks may be placed between the horizon and the viewpoint as can plants, and different types of coast may also appear.

Many of the screens you can get won't be interesting, but because it's random, every now and then you'll get very good ones. The same seed value will always produce the same picture, but not between the 8-bit and 32-bit machines – the program works fine on the new machines.

{elysia-1] Seed number 345
{elysia-2] Seed number 7567
{elysia-3] Seed number 98765

Joshua Westbury





Cashbook: Looking after the pennies

THIS is a simple Cashbook program that will work well on all the 8-bit Acorn machines – it won't work on the bigger machines because it loads a screen layout rather than drawing it each time.

To start off you are asked if you want to load a file, if not it's assumed you're starting a new book so the starting money can be put in.

The program works in pence only to avoid rounding errors – it's not really designed for businesses. So if you're starting with £20 you enter 2000 and press Return. From there you arrive at the main menu.

If you started by wanting to load a file, type in the name of the file and it will be loaded. The main menu is displayed along with the last page of the cashbook.

From the main menu you can add a new page, you are prompted for the name of the item and its cost in pence. The page is added and the new sub-total calculated.

If you receive some money you follow the same procedure but enter a minus number, so if you are given £5 as a birthday present you can enter *Birthday* as the item and -500 for the cost. The program will now add the number of pence to your running total.

You can start a new book by selecting N – you will be prompted to save the existing book. You can then either load a new book or start from scratch again. Selecting S allows you to save the current book while L will load a new one. The final option is Alter which takes you to a submenu.

This submenu lets you browse through the pages of the cashbook or change any items. You can change the name or the cost of any entry.

Once you've finished browsing you can exit to the main menu. If you alter the cost of an item the whole book will be recalculated to take the changes into account.

The basic idea behind this program is to help to budget income, which many people have difficulty with.

If you know the prices in advance you can see just how far your pennies will stretch – and it's never as far as you hope.

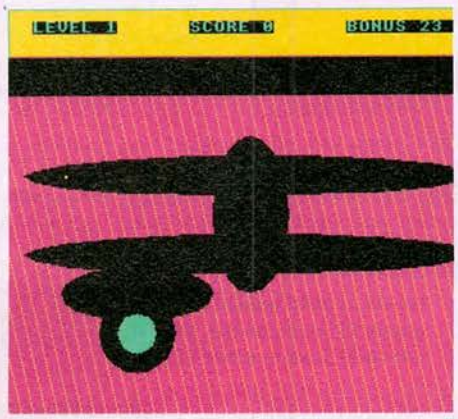
Paul Matthews

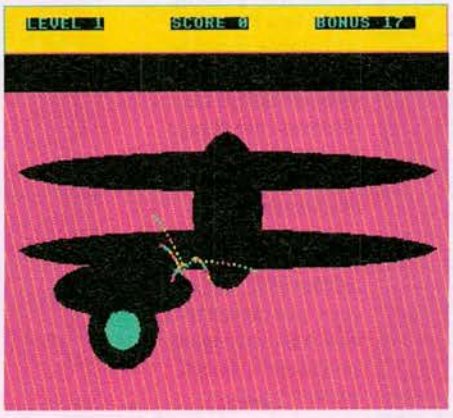
Myriapod: Tunnel of death

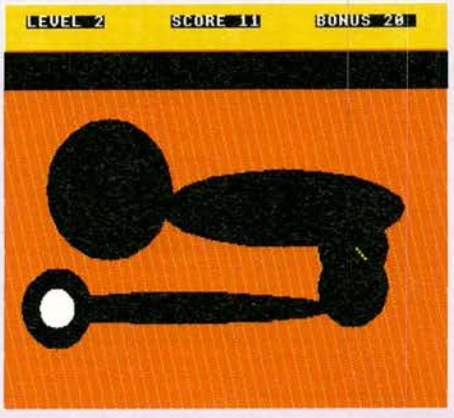
EVERY once in a while a game comes along which is a bit different to the run of the mill. Myriapod is such a one. The strange stringy creature you control floats in the air, and you must guide it through a series of chambers to the ball of food. Unfortunately the walls are lethal – doesn't come as much of a surprise does it?

This might not seem too difficult except for one thing: Inertia. Your myriapod tends to keep moving in the direction you send it, so turning corners involves killing the forward speed as well as pushing sideways.

The controls are the standard Z, X, ? and ; – there are lots of levels so it should keep you busy for quite a while.







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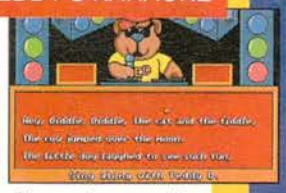
fun school 4

TEDDY'S KARAOKE



Sing along with DJ Ted to popular nursery rhymes.

TEDDY'S BOOKS

Select the correct number of Teddy's bedtime book.

TYPING

Type the correct letters and words and save Freddy from the crocodile.

SHOP KEEEPER

Shop with Freddy and his friends choosing coins to pay the bill.

DESERT DATES

Study historical events to find the secrets of the pyramids.

EXCHANGE RATE

Change Sammy's money at the international exchange desk.

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A MAJOR NEW DEVELOPMENT

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These new suites of programs are a revolutionary step forward in educational software. Their innovative system of automatically recording children's progress truly sets the 10 out of 10 Series in a class of its own.

Each package contains **SIX** expertly designed educational games **covering 10** of the most essential parts of a National Curriculum subject for children of any level or school age **from Junior to GCSE**. As children learn from the games their progress is **automatically recorded** in 36 specific areas of National Curriculum Attainment Targets. The programs are designed to be **fun for single players or groups** and the assessment system monitors the progress of between 1 and 64 children with **no input from parent or teache**r needed. Watch them, join in the fun or leave them and return later to check their progress. **You're in control!**

John : Achievement Record 10/10 Mathematics (Number - AT2)

SUBJECT	Carnival	Cover Up	Big Bang	Grab It!	Silicon	Cheers
Addition	2a.1	4a.4	3a.3	4a.6		2b.1
Subtraction		3a.4	2a.2	4a.5	2b.2	
Multiplication	4a.2	3b.1	5a.3	3b.2	7b.3	4a.14
Division	3c.2	4a.10	5a.4	7a.2	4d.4	
Fractions		6a.4			5b.1	8b.2
Decimals	6a.5		6a.9			
Percents	5b.2	6a.10	6a.8			
Estimation	8c.1			6b.1		3d.2
Units				3e.1	3e.3	5d.1
Powers					8a.1	5d.4

AT2 Level 4a.2 (i) Multiplication facts up to 10 x 10

*The achievement record shows the subjects covered together with the child's progress: Red: Help needed, Yellow: Practice needed, Green: **10 out of 10**!*

10 out of 10

MATHS (Number)

The Mathematics National Curriculum is split into five Attainment Targets. The Maths (Number) *10 out of 10* suite of programs is aimed to cover some essential parts of the Levels set out in Attainment Target 2. The package covers many topics from all Key Stages but the ten specific areas built into the design are listed below:

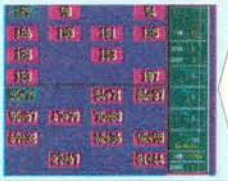
- ✓ Addition
- ✓ Subtraction
- ✓ Multiplication
- ✓ Division
- ✓ Fractions
- ✓ Decimals
- ✓ Percentages
- ✓ Estimation
- ✓ Units
- ✓ Powers

Carnival

Here's a great shoot-'em-up that checks number skills along with fire power. The speed of the numbers can be increased to challenge even arcade experts.

Grab It

Find and grab answers quickly as they jump around the screen in this fast-action game. It's a great way to practice number skills from tables to estimation.



Cover Up

This challenging game of matching really gets children thinking. It's a real game of strategy – especially in the multi-player modes.

Silicon Brain

This game makes calculator practice compelling fun. Key presses are displayed on-screen to let you look back when answers are incorrect.

The Big Bang

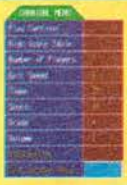
Keep cool and answer quick is the aim of this game. Quick responses are needed for high scores – an exercise in scale reading as well as arithmetic.

Cheers

Strategy is needed in this unique quiz game. It will keep everyone on their toes. Use any of the six graded sets of questions or compile your own.

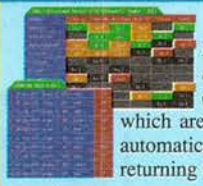
FULL MARKS FOR TOP OF THE CLASS SOFTWARE

Extensive in-game Options



Not only can the educational level of the games be chosen, speed of play, game length and many other options can be set to tailor the programs to your child's skill level at the game. This means the games can be set to suit anyone from novice to arcade expert – it keeps interest longer and increases personal challenge.

Dual Scoring System



High percentages change the colours of the achievement chart while good gameplay – combined with high marks – give scores which are recorded on the high score tables. Both are automatically saved on disc so that children can keep returning to the package to improve on previous results.

Certificate Printing

Children with high marks ca print a certificate of achievement Text or graphic options are give

to suit an printer an *Triple Education* will print yo a special on for a nomina charge.

Three Sets of Graphics

All the games have three sets of graphics to appeal to any age. These are automatically selected depending on grade – a parent/teacher override is provided so that you can select the pictures most suited to your child.

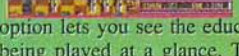
Unparalleled Quality and Attention to Detail

This package is the result of months of work by experienced programmers, educational designers, game designers, teachers, parents and children.

Two Guides

The player guide lets learning start quickly while the parent/teacher guide gives more details – including how to interpret the Attainment Target numbers.

Parent/Teacher Flexibility



Many of the automatic features of *10 out of 10* can be customised by parents or teachers – including sound off/on, the starting grade and the graphics to be used. A *Reveal* option lets you see the educational objective of the game being played at a glance. There's even an optional code system to prevent children altering stored information.

Ideal for ALL Ages: Junior to GCSE

The fully flexible games cater fo simple addition, subtraction and tables at easier levels but develop to more advanced topics. Adults will find the high levels a challenge too!

SIX Top Games

The games are designed with education of paramount importance but the fun and challenge elements ensure that children will want to strive for better results each time.

Designed for the National Curriculum with Traditional Educational Values in Mind

While ensuring that items like tables are well covered the package deals with many important subjects in the order recommended in the National Curriculum.

10 out of 10 Maths (Number) is available NOW for only £25.95 – but you can try it FREE!

You can order by post or phone with cheque, credit card details or Education Authority order. We will not process your order for payment for 14 days from the dispatch of the product by first class mail. **If you return it within that time we will not debit your credit card or we will return your original cheque or order.** This offer is available on all orders received from this advert. But Hurry – it is for a limited period only.

The *10 out of 10* Series is produced by *Triple R Education*. COMING SOON: *10 out of 10* ENGLISH. Ring for deta

ORDER by mail or telephone: Access and Visa accepted. *Triple R Education, 1 Percy Street, Sheffield, S3 8AU, England.* **0742 780370**

For all 32 bit Acorn home computers

Junior explorers start here

SHERSTON Software (0666 840433) are about to release another of the BBC B and Master range of software in the Peek-a-boo series which has proved very popular with parents and teachers alike.

Peek-a-boo Around Our Town gives infants the chance to explore their very own Peek-a-boo town and visit all sorts of shops and buildings to see what they can find.

Every scene contains a number of magical objects and animations just waiting to be discovered. To find them children use the arrow keys to point to where they want to look.

The package is fully compatible with overlay keyboards and comes complete with full colour A3 and A4 overlays, a teacher's book and word lists to make into games, flash cards and so – all for £21.50.

Mix and match

GEMINI is a new software package from CSH (0480 67945) which is an adaptation of the classic game of pairs or pelmanism. Of equal use in home or school, it is suitable for children from about four years of age.

There are over 20 games to play and CSH have built in the ability to make up your own. Gemini has three levels of difficulty.

It uses high quality sprites featuring animals, words, pictures, road signs and foreign languages and games can be saved at any point and taken up whenever you want. The price is £29.95.

All in all

GESTALT Number from Basing Educational Software (0248 602402) has been recommended by the British Dyslexia Association. This is a suite of programs teaching basic numeracy skills and can be used for primary as well as remedial teaching.

It costs £50 and covers topics such as number recognition, counting, sequencing and number bonds. Gestalt 2 is under development at present for release next January. This is a follow-up suite of programs which deals with higher level skills.

One step at a time

RESOURCE (0302 340331) and Humberside LEA have developed Small Steps to meet the needs of course planning and pupil assessment and recording for special needs and young children.

As well as providing Statements of Attainment split into small and more relevant steps, the program gives teachers the opportunity to edit, delete or create their own small steps.

In addition to planning and analysing courses in Mathematics, Science, Social Education and English for groups and individuals and relating them to the National Curriculum, they can record pupil attainment and progress.

The date is automatically recorded, and curriculum plans, progress reports and pupil details can be printed as text or in a grid.

New frontiers

FRONTIER 2000 from CSH (0480 67945) is now available on CD-Rom. Incorporating Acorn's Replay program, it has about nine minutes of video files covering railways, wildlife and the Queen opening Tullie House Museum.

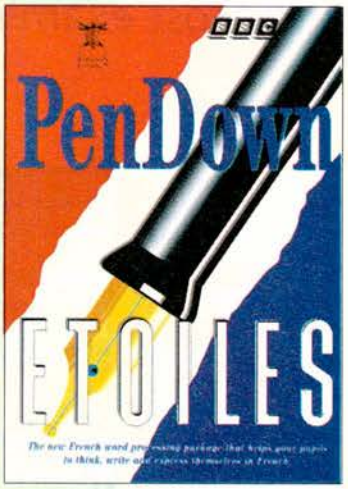
Extra to the floppy disk version there are now four more areas to explore: Transport, the Scottish Borders, Tullie House and a Carlisle City Trail. These – as well as the original 11 trails – have been illustrated with full colour sprites.

The superb resources of the original have been supplemented, too, with more worksheets, guide books and a disk-based collection of old photographs.

Professor Hardwick has also been given a voice which he uses to ask the questions and acknowledge your response. The cost of the complete CD-Rom version is £175.

A star is born

BBC Enterprises and Longman Logotron (0223 425558) have enhanced that classic Archimedes schools wordprocessor PenDown by adding a French element.



PenDown Etoiles is an all French version of the original program and includes a spelling checker and menus all in French. The software manual is still in English but there is a special French Pupil's Guide designed for the secondary school French classroom.

Etoiles will complement the BBC broadcasts which aims to encourage thinking, writing and expression in French.

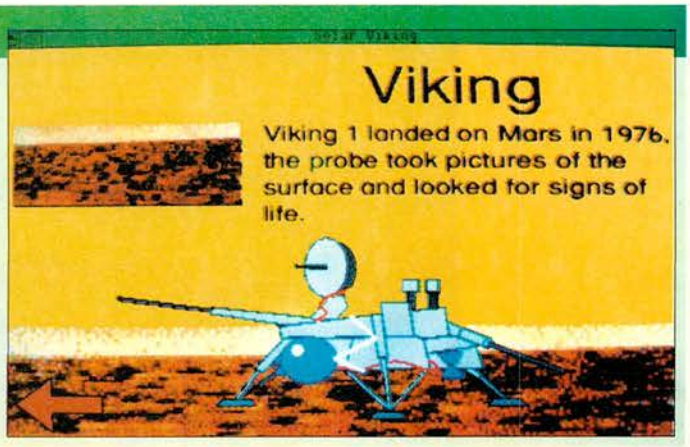
The price of the package is £63.45 including VAT and all the power of PenDown has been kept while simple access to French accents from the keyboard has been added.

New worlds

AS the Micros for Special Needs Exhibition in Oldham on 13-15 October draws nearer, NW Semerc have launched two packages of interest to all. My World has undergone some updating and My World 2 will contain all the features of the original framework program plus the ability to rotate and resize images, as well as the facility to link objects *magnetically*.

Optima is a totally new product which combines pictures, text and sound. Developed by Paul Nuttall and Simon Hayles, it lets you create adventures.

Using the mouse to pull pictures from resource files you can type in sentence and alter the size of the text and illustrations. Digitised sound can also be dropped on to the text and pictures can be replayed by simply clicking on the appropriate object. One screen can be easily linked to another, just like pages in a book.



Save the trees

Rog Frost examines an adventurous form of Logo

Rog Frost has taught in Wiltshire comprehensive schools for more than 20 years. His present post is Information Technology Co-ordinator, in a school for pupils aged 11-16.

PRODUCT SPOTLIGHT

Product: The Crystal Rain Forest
Price: £35
Supplier: Sherston Software, Swan Barton, Sherston, Malmesbury, Wiltshire SN16 0LH.
Tel: 0666 840433

A MATHEMATICAL adventure in Logo, for junior school pupils, published by Sherston and written by Simon Hosler? It must be good. Most teachers in primary schools will be well used to Hosler programs – he seems able to get into the minds of children and produce software with humour as well as superb graphics.

As is usual with software from this company, the first disc is a key disc. This is essential to get the whole pack to run but is not copiable. This allows Sherston's software preview scheme to operate. The other three discs may be copied for security purposes or installed on to a hard disc.

The program has a graphical adventure game format, with decisions to be made as you travel around the planet of Oglo. The planet is in big trouble because the Cut and Run Gang are cutting through the rain forest for profit. The king has decreed that no more forest should be cut but his most disloyal subjects have poisoned him.

He requires help from the magic crystals hidden somewhere in the forest. Before setting out for the forest two parts of a map must be found and help must be sought from Professor Roberts who is living somewhere in Bridgetown.

All of this leads the children who star in the program into a series of puzzles which require Logo-type skills to solve. After the scene has been set, the search for Professor Roberts is on. His laboratory is in an old temple – which looks like a pyramid to me. A young lad called Carlos can squeeze in through a gap and control robots who can open the door.

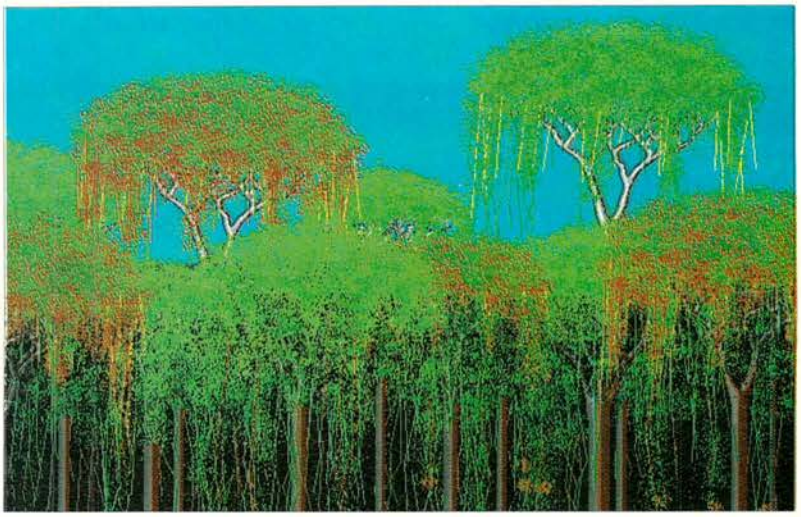
These robots require commands such as WALK 20 and TURN. In other words they are the start of Logo. Initially the movement is instant but then, short programs of Logo instructions are needed for success. Carlos himself then needs steering through the pyramid but this is almost relaxation as it is completely under mouse control.

● *The forest waits for you*

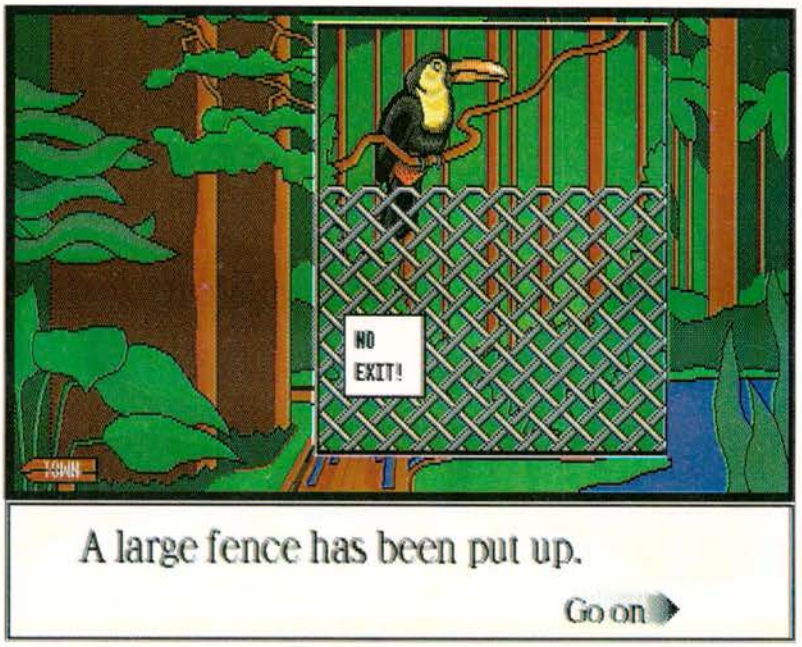
Sadly, the professor is not there so the children start to search Bridgetown. Movement around the streets is again by Logo commands, but now LEFT and RIGHT replace the single command TURN. In this search, our heroes may meet trouble in the form of the Cut and Run Gang but help may also be forthcoming from an unexpected quarter.

Apart from receiving help, the children must give it. Esme, the gardener, needs some bridges repaired and the required pieces can be floated into place using – you've guessed it – Logo-style commands. This activity is quite tough and teachers may like to remember that they can set different levels of difficulty.

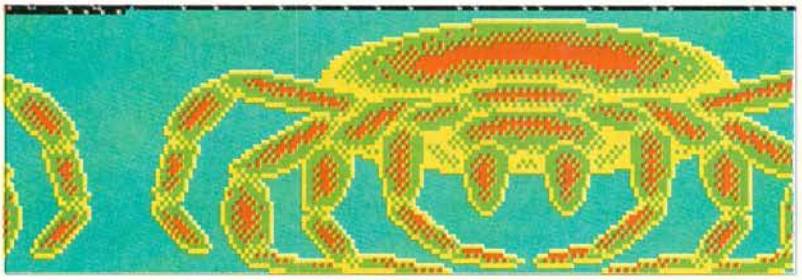
The action can now turn to the



● *Can you save the landscape?*



● *Learning Logo without tears*



● *Just slide along...*

jungle and you can't get there without helping Esme, where Herbert needs help packing leaves. This involves resizing the packs as they fall into bamboo crates.

Again, it is quite a complex task and simple levels may be needed with some youngsters. Payment is in gold coins and these must be spent wisely at the shop, so that the children can find the professor and get help.

The Cut and Run Gang are hard on their heels, and soon the professor, like the king, is poisoned and the river journey to the depths of the forest has to be undertaken alone.

Navigation involves more Logo commands and these can lead the boat to a series of jetties. At the first of these a rope bridge problem must be solved and, for this, the commands are really true Logo.

Then, at the trading post, poison must be prevented from going over the waterfalls. It is here that the whole mission seems to fail. The magic crystals are found and then broken and there seems no hope.

But users of the program will now have quite a lot of skill using Logo, and the program's very own version, called Crystal Logo becomes a way of designing crystals.

It is a sensible set of turtle graphic commands, with all words and numbers selected by clicks of the mouse button. It is fun to use and has a good point and shoot colouring facility. It could well be the only Logo a junior school needs to meet the requirements of the National Curriculum.

When I first used the program, I wondered how the computer would decide if my design for a crystal was good enough. But I had committed the cardinal sin of not even opening the manual.

It is the teacher who decides and whether the users can move on to the satisfying ending in which all the wrongs of the planet Oglo are put right. It is the obvious and sensible thing to do because the teacher should have an idea of the capabilities of the user.

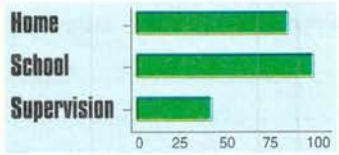
The program is Risc OS compatible and installs itself on the icon bar. It does not multi-task but it is possible to play a part of the game, save part finished games and return to them. Or, the teacher can decide to start at any point in the program. This means that the very good Crystal Logo can be used as a separate entity at any time.

If you don't like the existing words used by Crystal Logo they can be changed, perhaps for compatibility with another version of Logo. You can save screens to disc or print anything, provided that a Risc OS printer is installed.

Summing up

The support materials are superb. The manual is good as is the Crystal Logo book and there is the usual plethora of charts, posters and maps and a National Curriculum guide. My 11-year-old daughter probably gave the best summing up of the program. Having played it through about three times she declared it: Brilliant.

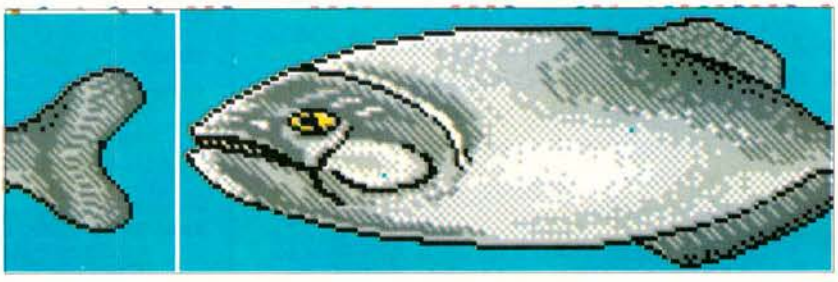
SUITABILITY



NATIONAL CURRICULUM

Technology AT5
Geography AT1/2/3/5
Science AT 1/2/3/4/5/8/12/13
Mathematics AT4/6/8/10/11

Ages 9-13



● *...quite swimmingly*

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Coastal watch

Simulating the geography of British coastlines – Rog Frost investigates

PRODUCT SPOTLIGHT

Product: Modelling Coasts
Price: £25
Supplier: Science Education Software, Unit 12, Marian Industrial Estate, Dolgellau, Gwynedd LL40 1UU.
Tel: 0341 423305

WHEREAS much good software is content free, there is always a place for good, subject specific, computer aided learning or modelling programs. It will come as no surprise that this software attempts to simulate the complex action of the sea – as it acts on the coast – using a mathematical equation.

This equation is then used to predict what might happen to the various different rocks that make up the coastline and to produce a 3-D drawing of the situation.

First of all, the user – probably the adult in charge – needs to enter the data for an area of coast and sea. This could be real or imaginary.

My review copy arrived the day after my son went to the Dorset coast for a GCSE geography field trip on coastal erosion and geology. So I was able to set up a model for the area he visited with information supplied by his geography teacher.

Setting up is reasonably easy, as long as you have the data. A grid system is used and each grid square – 400 of them – needs to be given a colour to indicate the rock type. We now encounter a problem since only a limited range of geology is on offer.

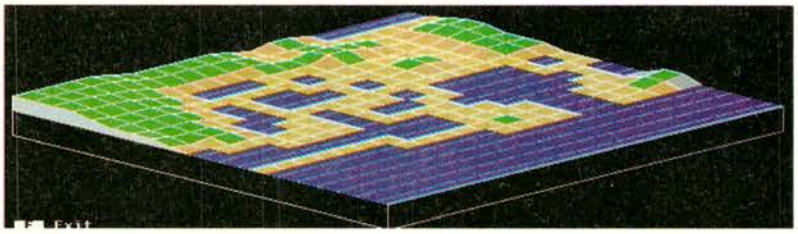
If the rocks you wish to enter are not clay, sandstone, limestone, dolerite or granite you have a problem. In my part of the South of England, chalk is one of the commonest rocks bordering the sea, but the program can't handle it.

So what to do? Should it be entered as limestone, a harder variant of the same chemical, or perhaps sandstone, which might have a similar hardness? For me, this is a real flaw in trying to emulate reality.

The second piece of information to go on to the grid are spot heights. These can vary from 0 to 900 feet by entering the keys 0 to 9. This is no doubt fine for the glorious coasts of West Wales but for the lower parts of Southern England, a different scale is needed.

Despite these reservations, I must stress that the task is quick and easy. You don't need to spot height all 400 grid squares. If some are entered, the computer will attempt to fill in the rest. It is also possible to show a geological fault line on the grid.

When satisfied with your grid, you can commit it to disc and then watch the rather ordinary creation of a perspective drawing of your chosen section of coast.



● *Set up your model with field trip data*

This can go wrong. A section of my Dorset coast which I entered as sea was not accepted. The computer persisted in making it dry land. I had to re-edit my map and make it less realistic to create anything like the coast I wanted.

You can load a stored coastline from disc. When you select the option a list of the available files is given and users must type in the name. I can see scope for errors here. The map can be edited and, once satisfied, the spot heights are all re-computed and the 3D drawing commences.

Now, the simulation can begin as the user – certainly a pupil now – selects wave direction, erosion or deposition, sea level rises and falls and so on. These are chosen by use of function keys.

The keys to use are highlighted on screen. For example, a press of the erosion key will show the effect of 100 years of waves battering the coastline.

In fact, before it shows the effects, you must select the re-draw option. Unfortunately there is no way to save the numbers that go to make up any coasts created by the simulation. Printed output is also, at best, limited.

Coastal Modelling has been written especially for the Archimedes but it looks and feels like an old BBC B program rather than a piece of Risc OS software.

Acorn have set up a standard, routine user interface but this program does not use it. Indeed it has a strange mish-mash of using the mouse, function keys or keyboard to move to the next stage.

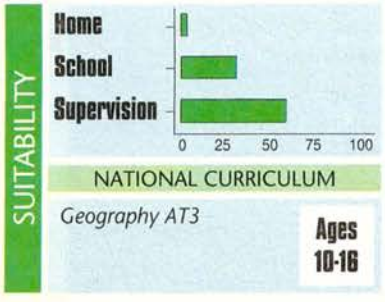
There is no option to save screens as sprites – although users of 4Mation's Snippet program can grab screens.

The program only claims to print on dot matrix printers and does not use the standard drivers. In fact my own, elderly and much used 9-pin Taxan Kaga printed one line of the screen and then hung up, not once, but again and again.

Summing up

All in all, it is rather a frustrating job to use this program and my son decided not to make use of it in compiling his field study report.

With its poor use of the computer, and rather second-rate data I can't recommend it. It is based on a good idea and has lots of potential, but Coastal Modelling is really a rather poor attempt.



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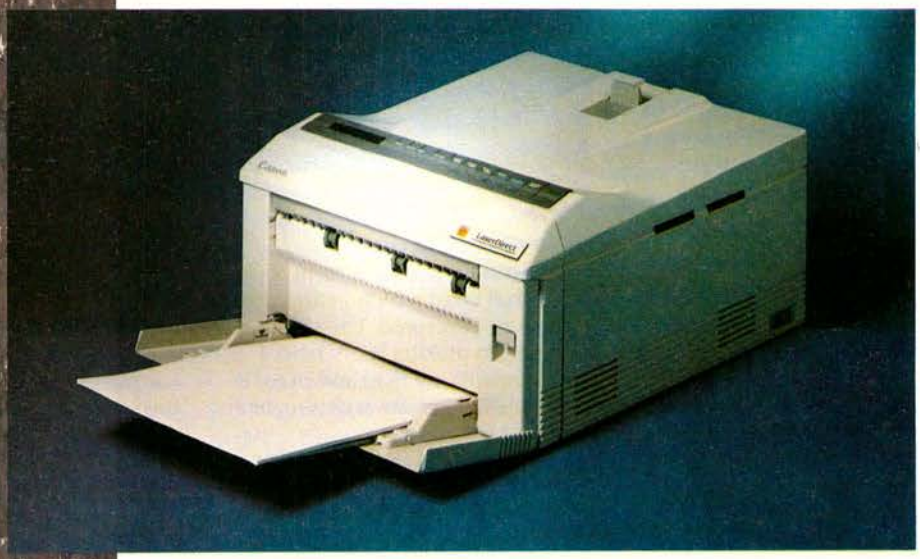

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Doing it write

John Clemence takes a look at Punctuate

PRODUCT SPOTLIGHT

Product: Punctuate
Price: £32
Supplier: Xavier Educational Software, Department of Psychology, UCNW Bangor, Gwynedd LL57 2DG.
Tel: 0248 351151 ext 2616

WHEN I first saw this package I was rather hoping that here was an application which would check and correct my punctuation. Not so, Punctuate is an application designed to give children practice in placing punctuation marks.

There are three different sections: Tutor, Speed Test and Quiz Master. Each can be operated at the level of practice, basic or advanced and while using the supplied sentences it is possible to select precisely which kinds of punctuation will be covered.

The Tutor presents the child with a screen on which there is a row of boxes containing different punctuation marks. A larger box holds up to three lines of large print style text and approximately half a screen of help information which can be called up as required.

Using the mouse and the simple screen controls you move a cursor to the point where you believe a punctuation mark is missing and then – still using the mouse – select the punctuation mark from the choices at the top of the screen.

If you are correct the mark is inserted, otherwise nothing happens.

When you have completed work on a sentence you click over the DONE box and if the computer agrees with you, the next sentence appears. If not you have to think again. You can also have clues, where the computer highlights all the punctuation which may be expected in the current sentence, while the help option explains the different kinds of punctuation.

At the end of the fourth sentence a screen appears showing all the sentences complete with punctuation and the number of errors you made. You can make a permanent paper record of this if required.

The Speed Test is essentially a fun way of providing the same experience but against the clock with the available punctuation flying around a part of the screen. I enjoyed this although some of the punctuation marks – especially the single quote mark – were a little difficult to identify.

I liked the Quiz Master less. Some of the questions were rather clumsy – often using a preposition to end a sentence. Also in this part of the program the multiple choices need to be punctuated in order to make their meaning clearer. However, I am sure that there will be a number of children who will enjoy the competitive elements in these two options.

Full facilities are provided for creating your own sets of sentences. This will require some considerable adult involvement, but is an opportunity to work closely with the child on specific problems.

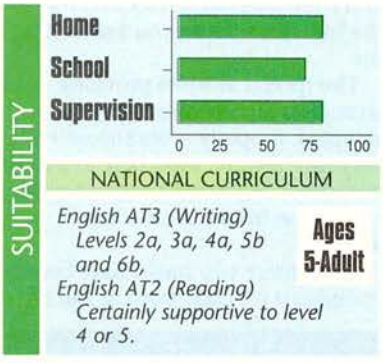
You need also to remember that the program does not handle your own lists in quite the same way as the supplied list.

Therefore if you want to give children specific help with full stops and commas you will need to create sentences with just examples of those items.

Summing up

This will be a useful program for parents or teachers especially if they take the trouble to construct their sentence lists carefully and discuss the work with their children.

John Clemence is Deputy Head of a large primary school in East Sussex as well as being the Head of IT. His wife is a teacher and they have two boys – aged 7 and 12.



● *Punctuate's main menu*

● *Using the tutor*

Help
Done
Clue
There was no food in the house The only shop was shut Tom went to bed hungry
000
03
01
A full stop marks the end of a sentence. Examples:
The man walked.
Everybody dances.
I like fish. He likes meat.

● *Help is only a fingertip away*

Spelling bees

PRODUCT SPOTLIGHT

Product: Soapbox
Price: £35
Supplier: Xavier Educational Software, Department of Psychology, UCNW Bangor, Gwynedd LL57 2DG.
Tel: 0248 351151 ext 2616

John Clemence explores a new talking spelling solution

SOAPBOX is designed to assist in the teaching of spelling and there are essentially two stages to the program with an optional game at the end.

The first stage presents you with an attractive screen. In the centre is the first of the words you are expected to learn surrounded by four outline shapes, only one of which actually fits the word in the middle of the screen. You then use the mouse to slide the word over the correct outline.

If you put the word over the wrong outline it simply pops back into the middle of the screen. When you have successfully placed your word the computer pronounces and, optionally, spells the word.

In the second stage you have to spell the word back into the computer. The screen has a megaphone icon which lets you hear the word as often as you need and a red cross which sounds out the individual letter you are looking for.

The speech samples provided were clear and, because they are sampled, properly pronounced – a very nice feature, especially as letters can either be typed or entered with the mouse from the on-screen alphabet.

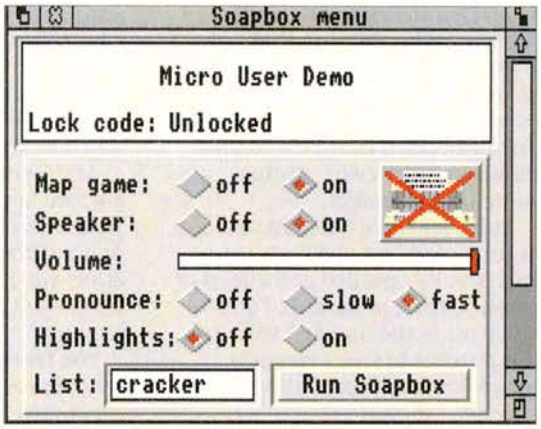
Once these two stages have been completed for each word in the file an optional Map game begins. This is intended as a fun way to re-enforce recognition of the initial letters of the words and is pleasant enough, though I'm not quite convinced that it bears any particular relevance to the purpose of the program.

Finally, and again optionally, a list of the words set and the attempted spellings may be printed out together with the time taken.

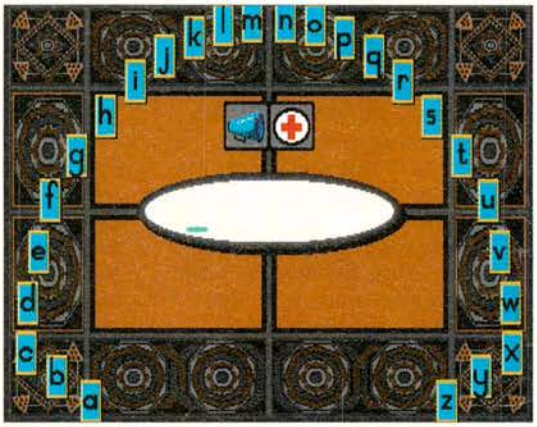
In order to create your own spelling lists you either manipulate the files supplied with the software or – if you have a sound sampler – make your own. Full instructions are provided in the manual for the use of two such systems and this can be done for as little as £30. Four further *vocab* discs are available separately.

Soapbox is quite a fun way to practice spelling, although I rather suspect that the program is a little too pedestrian to hold children's interest for very long.

It is important to realise that to make your own word lists depends upon the use of extra hardware, but since a major part of the power of this program is the way that it reads the words to the children and the further help it gives in spelling out those words, it may be well worth acquiring.

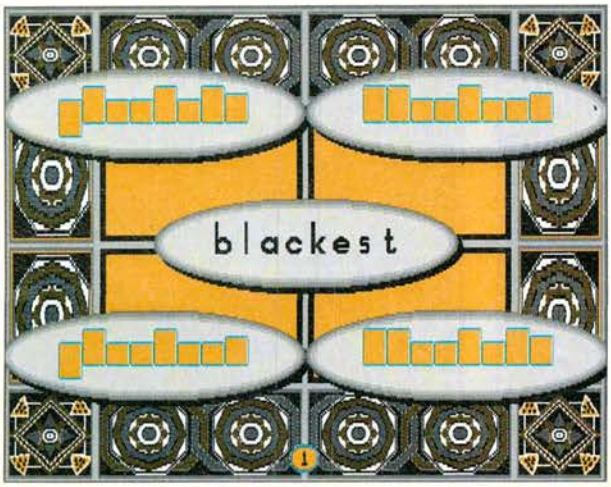


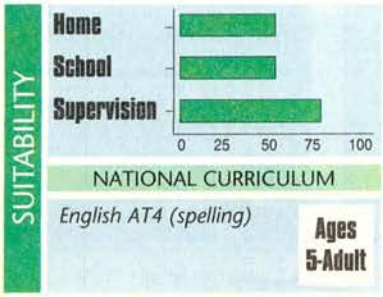
● *Working from the main menu*



● *Spelling the word into the computer*

● *Fit the word to its correct shape*





Summing up

While there are certainly more complete ways to make use of information technology than programs such as Soapbox, there will always be a number of children – and even some adults – who will benefit from the supportive nature of this

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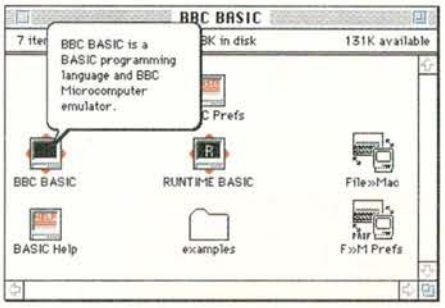
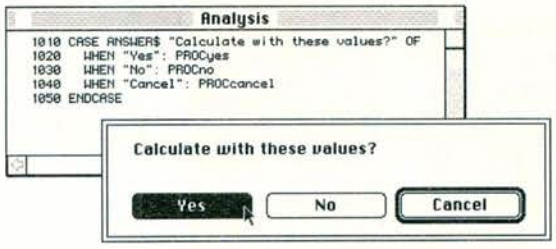


Balloon help provides instant information about the menus and dialogue-box options.

Save Graphics option saves the BBC BASIC graphics screen as a PICT file that can be loaded into other programs.

Runtime BASIC utility converts your BASIC programs into stand-alone double-clickable Macintosh applications.

Macintosh-style interactive editor provides a scrolling view of program listings with convenient cursor or mouse editing. You can work with any font available on your system and you can display keywords highlighted in bold for easy reference.



Macintosh Toolbox interface allows you to define your own menus, dialogue boxes, and scrolling lists using convenient BASIC keywords, and use the standard file dialogues for opening and saving data files.

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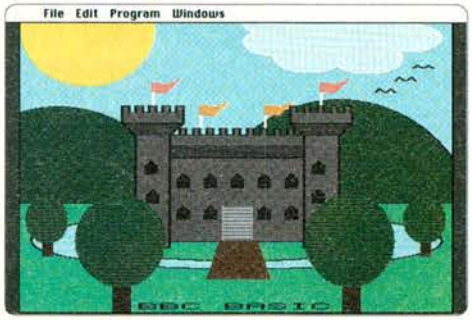

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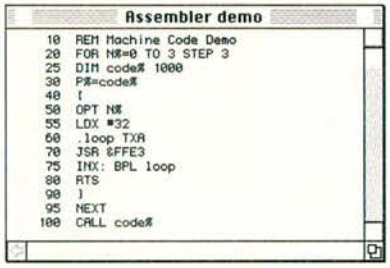

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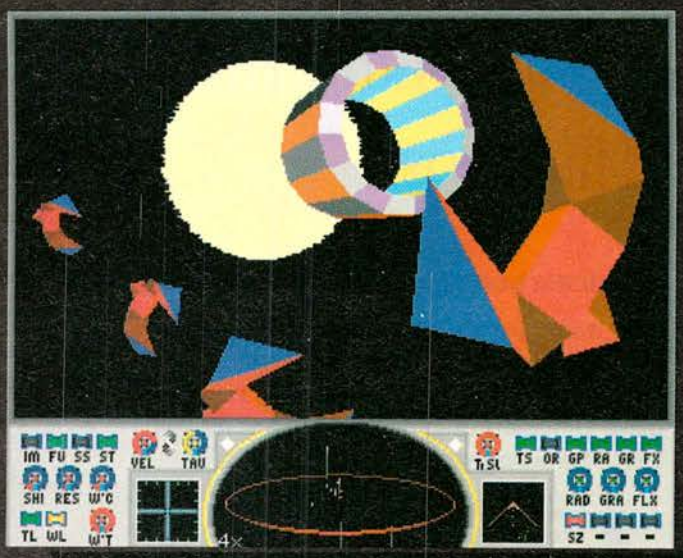
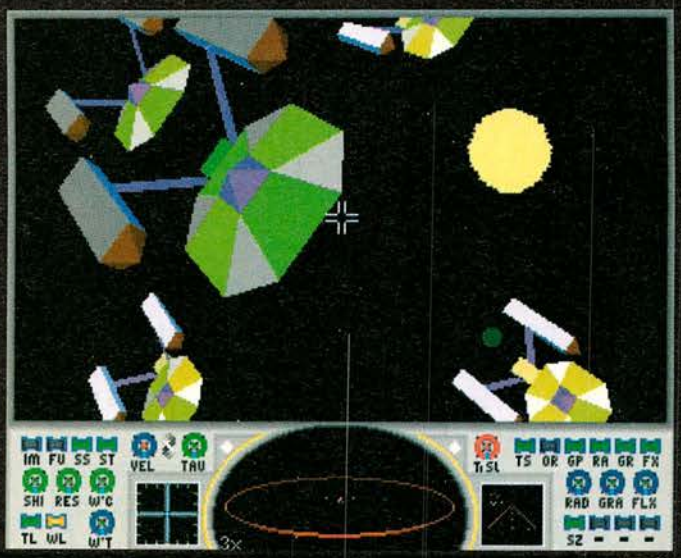
BLACK ANGEL





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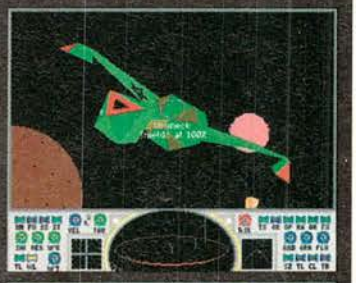
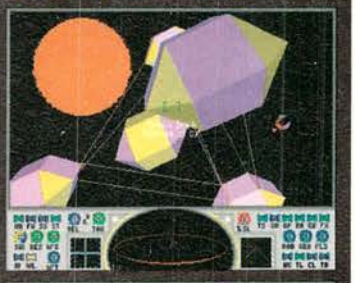
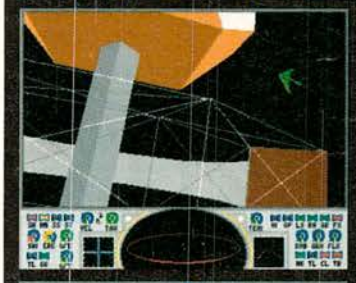
Evidence has been uncovered of an ancient civilization which may have inhabited a third generation galaxy. A civilization which seems to have beaten nature's limits of time and motion. A civilization which could travel faster than light. A civilization which may have outlived the death of its mother galaxy and which may even have had the power to leave the universe itself.

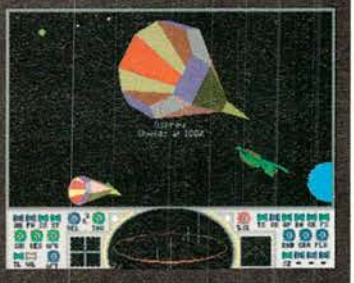
Of course very few people believe what can be read in the five billion year old religious scripts. They choose to believe that the Star Gates are a natural phenomenon, they choose to become extinct.

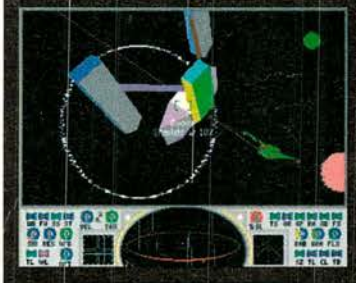
But you believe, you and a few others like you. Choosing to throw yourself into incredible debt in order purchase a second hand star fighter, you must now roam the galaxy searching for the parts to the key that will unlock the Star Gates. Though because this is real life and not some romantic tale, you will also need to earn a living to pay off your debts and maintain your ship. And don't forget the Tau Hoppers, those who take and do what they want, and if need be, use general relativity to escape into the future.











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THE 32-bit Acorn Games SPECIALISTS

Populous

...playing gods

THIS unique game is perfect for the Archimedes and I was extremely happy to see it ported from the ST.

The music is the first thing that hits you, creating an atmosphere of mystery as you are coaxed into choosing from Conquest, Tutorial or Custom.

These are the three ways to approach your first sitting. Custom allows you do change the game parameters to test your skill as a world leader, the Tutorial option with the manual in hand takes you through the whole sequence, while with

Conquest it's you versus the computer in a titanic fight of good against evil.

The main screen can be divided into four for ease of description. To the left is a book of worlds or levels. Genesis is the first and is a land of grassy plains.

In the middle of the screen is the area you are affecting. You can change to any part of the world by clicking the mouse on the part of the map you want to go to or move in small steps using the arrows on the chequered board which is your control panel.

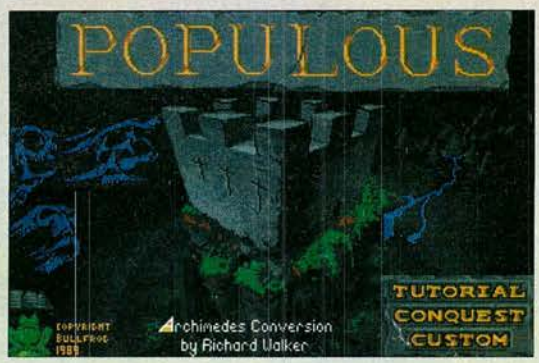
Here you can make the decisions to affect the lives of your blue tribe – so called because of the colour of their clothes and flag – create knights to protect them, swamps, floods, earthquakes, volcanoes to destroy or hinder your opposition and so on.

You can alter your attributes using the balance icon and set options via the world icon. These are many and varied, but to give you a feel you can make life easier by allowing yourself the option of natural disasters while denying your opponent and weakening his reactions.

There are two sliding scales. The larger shows your power or manner and determines your ability to make things happen. The second surrounds the shield which tells how the two populations are doing.

Each time you load a screen you are told the type of land it is and salient facts such as the water is fatal and the swamps bottomless. This is important as it effects the techniques to be used in the game.

You can only build when you can see the blue flag of your tribe or when one of your tribe is present – it depends upon the world you're playing.



The first thing to do is to create land – the flatter the better. This is done by using Select to build and Adjust to take a block down. This is all done on the central area which is a 3D plan of the area.

As you flatten the ground your tribe build huts, and cultivate the fields – the pattern of the land

changes to show this – breed and build log cabins, stone houses, stone roundhouses and castles.

The evil horde are dressed in red and you'll find that eventually they build a causeway to your land mass. Now is the time to discover the mysteries of your ankh and create a knight who will burn and pillage for you.

The icons on the chequered board give you the options to make your people settle, join into larger groups, gather at their spiritual symbol – the ankh – and go to battle.

If they gather at the ankh they eventually turn into a very powerful group that can be converted into a free-ranging knight. For ultimate destruction there is always the armageddon option.

On an ARM2 machine there's a certain amount of slow down when the world is about a third full of people. On an ARM3 the slow down occurs at about twice that figure – the ST was just slow anyway.

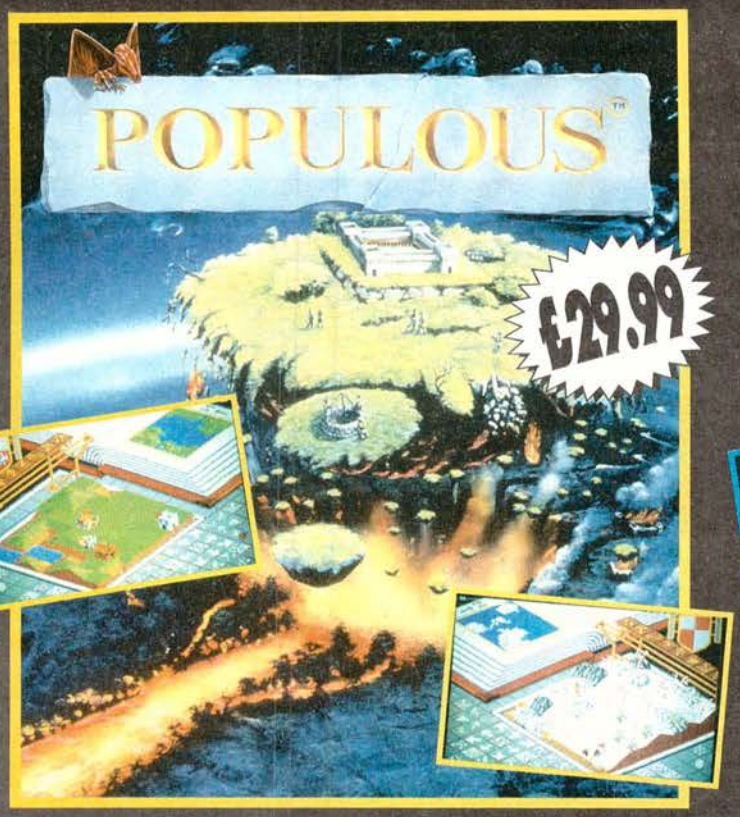
The better you perform the higher your score and the more challenging the next screen. A game of infinite possibilities which is as brilliant today as it was when I first played it. If you buy nothing else this year, buy Populous.

Steve Turnbull

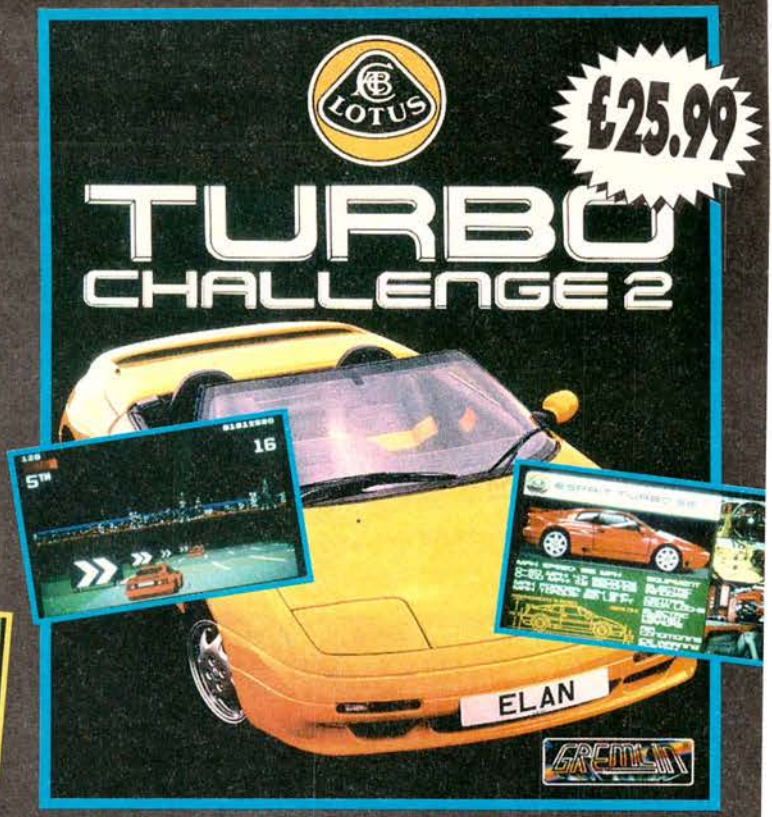
> ...it's you versus the computer in a titanic fight of good against evil

PRODUCT SPOTLIGHT

Price: £25.99
Supplier: Krisalis, Teque House, Masons Yard, Downs Row, Rotherham S60 2HD.
Tel: 0709 372290



As a Divine Being you have a group of followers from whom you derive your power. The more followers you have and the greater their achievements, the more power you wield. Unfortunately, there is another group of people who follow a different deity. Since there's barely enough room in the world for your own magnificence, two won't do. You must rid the world of the opposition. To do this, you will use your great power to move the earth and your devout followers to crush the misguided.



Lotus Turbo Challenge II is regarded as the best driving game to date. In an amazing piece of programming Krisalis have converted this best seller for the Acorn Archimedes and compatible computers.

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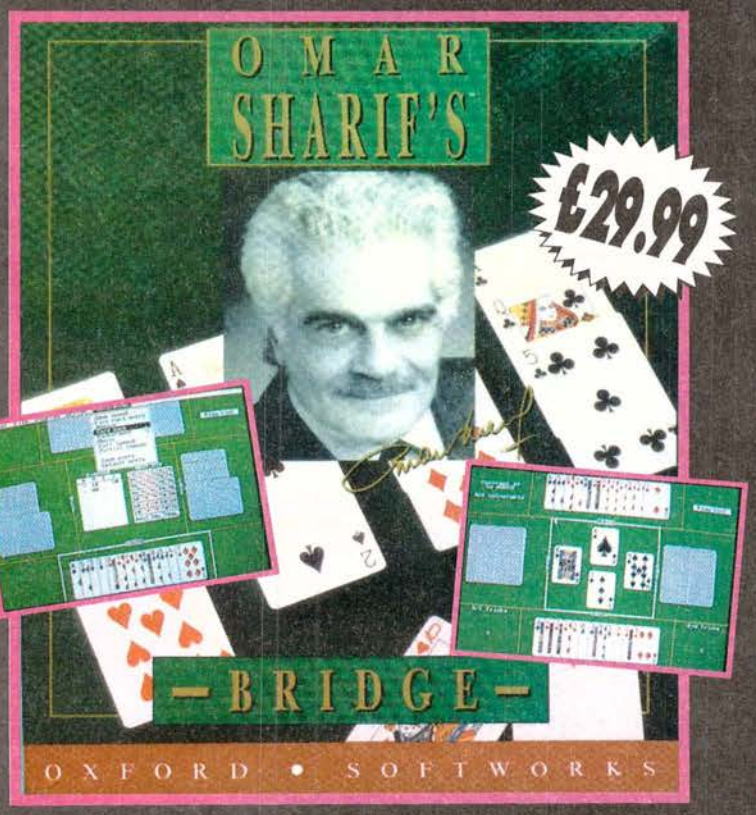
- The opportunity to race a sleek Turbo Esprit or the stylish Elan soft top.
- 8 death defying stages with over 60 checkpoints.



Imagine yourself at the tables of Monte Carlo, playing bridge with the masters of the game...with Omar Sharif, world famous bridge columnist and card player, as your partner and personal tutor!

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Oh No! More Lemmings

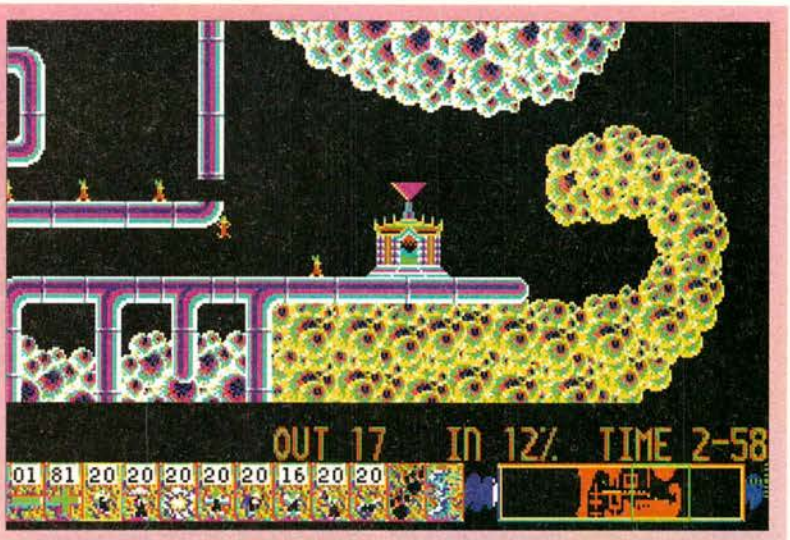
...infectious mayhem

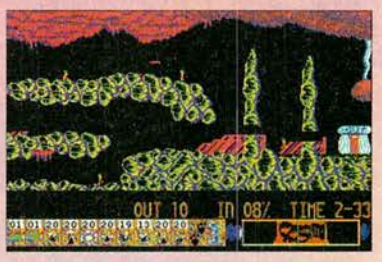
YES it's here, the code has winged its way from DMA Design to Psygnosis and on to Krisalis whose programmers spared no energies in getting this new dose of infectious mayhem to your screens.

Being one of those poor blighted souls who needed the passwords to finish the original game I was pleased to see that you could start with the Tame levels and then progress on to the Crazy, Wild, Wicked and Havoc levels or start straightaway on the first screen of any level.

Some of the screens are easier than the original and Tame screens don't take you through a learning curve but give you 20 of everything so you can practice your techniques and hone your timing – you need both on later screens.

The interface is identical to the original with puns naming each screen and other plays on words to password them. The music and sound effects are really superb with zany renderings of Kempton Races, Three Blind Mice, Greensleeves and the occasional rave tune – F1 and F2 could save your sanity here.





All your old green tousled favourites are here: Climbers, blockers, floaters, bombers, miners, bashers, builders and diggers as well as the infamous nuke'em icon.

Some of the screens are simple, others are complex requiring pixel perfect precision and to-the-second timing.

This is especially so when it comes to Super Lemming who not only moves as if he is supercharged but he can do everything and you've only got him to save. Good luck, you'll need it.

The animation is brilliant, the graphics detailed and full of character the puzzles taxing. Beautifully put together, it is an absolute must.

Pam Turnbull

> Some of the screens are simple, others are complex requiring pixel perfect precision

PRODUCT SPOTLIGHT

Price: £19.99
Supplier: Krisalis, Teque House, Masons Yard, Downs Row, Rotherham S60 2HD.
Tel: 0709 372290
Requirements: Original Lemmings disk

Lotus Turbo Esprit and Saloon Cars Deluxe

...who's in pole?

> Both are great, but in my opinion, Saloon Cars Deluxe gets the chequered flag

LOTUS Turbo Esprit is known as Lotus Turbo Challenge II on lesser machines. It basically revolves around you driving in a race in your brand spanking new Lotus Esprit and later on, your delicious Lotus Elan.

But one of the main features of the game means that you no longer have to play this game on your own.

The aim is simple enough. You have to glue the pedal to the floor and try to finish the current stage within the time limit – if you don't it's Game Over. Every four stages or so you finish the race. That means you get to go on to the next level with all new scenery. Wow.

The graphics are superb. They have the polished look of a good 16-bit game and they move faster than Pablo Escobar at a police conference.

The different levels, Forest, Night, Fog, Snow, Desert, Marshland, City and Storm are all varied and there is usually a special tactic that will help you to complete the level.

In two-player mode the split screen doesn't make it any more difficult to drive and the screen update doesn't slow down one little bit.

The sound was a pleasant surprise: A groovy theme tune, little ditties to introduce each new level and adequate in-game effects.

But all these lovely graphics, levels, sounds and options wouldn't count for squat if the game played like the Chinese high jump team.

Fortunately, the response to the controls – keyboard or joystick – is good, which could make or break a game of this genre. But what about life-span?

Not great I'm afraid. It would probably only take a week or so to complete. The two-player mode does certainly help, but the competitive nature of two players duelling it out doesn't really suit the Outrun style.

The basic idea of Saloon Cars Deluxe is to drive your Astra GTi in a season of 10 races, qualifying as quickly as possible and winning as many races as you can.

As the game tries to be realistic, you have a money management side to the play. This enables you to buy different tyres, engines, brakes, and employ different mechanics to service your car in a pit stop. It is even possible to buy a new car, a BMW M3 or a Sierra Cosworth.

And the cars all go in the same race, therefore a mere Astra has no chance of beating a Cosworth, so the aim of the Astra driver is to finish first in his class.

You can redefine the controls easily enough – and once you've got the knack you don't look back.

The graphics are truly superb, with a smooth screen update even on my lowly 2Mb 310. 1Mb, 2Mb, Arm 3, hard disk – you name it and there's an enhanced version for it. On an A5000 it's close to a religious experience, while playing it on a 1Mb A3000 is pretty good.

Loads of nice touches include spinning cars, tumbling cars and bashing yourself against the steering wheel and the rear view mirror.

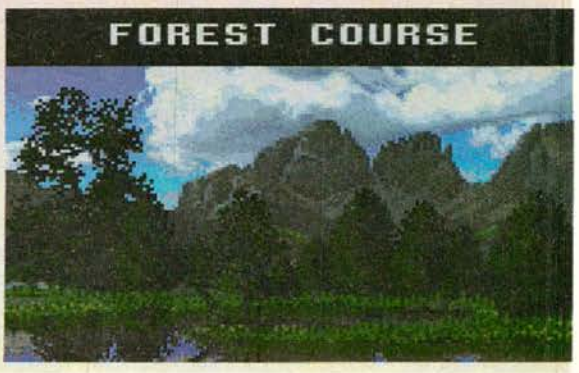
There are, of course a couple of shortfalls. Firstly, the sound. No tunes, and very sparing use of sound effects. But there is a deep, throbbing engine sound, which enables you to tell if you're over revving.

Another let down was the out of race presentation. The same style as the first Saloon Cars, still with the disturbingly naff graphics.

But the two main faults are no problem if the actual gameplay is challenging and exciting, which is true in Saloon Cars Deluxe.

Lotus is playable, exciting, gratifying and cheaper. Saloon is playable, exciting, gratifying and more expensive. Both are great, but in my opinion, Saloon Cars Deluxe gets the chequered flag.

Ben Reilly



PRODUCT SPOTLIGHT

Product: Lotus Turbo Esprit
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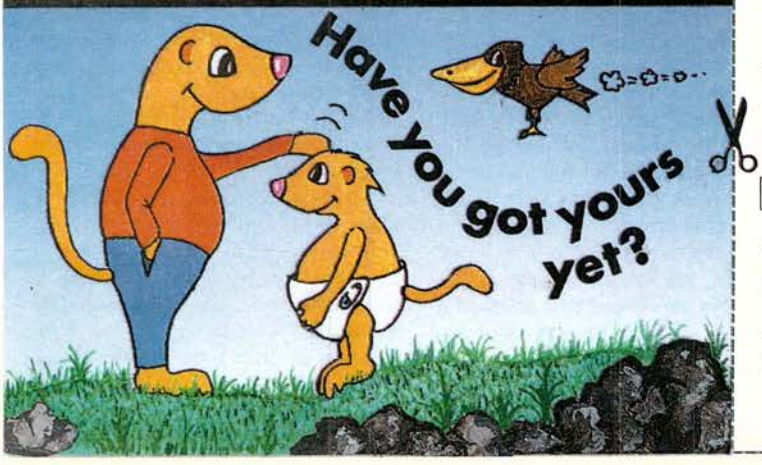

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Microdrive Designer

...DIY golf courses

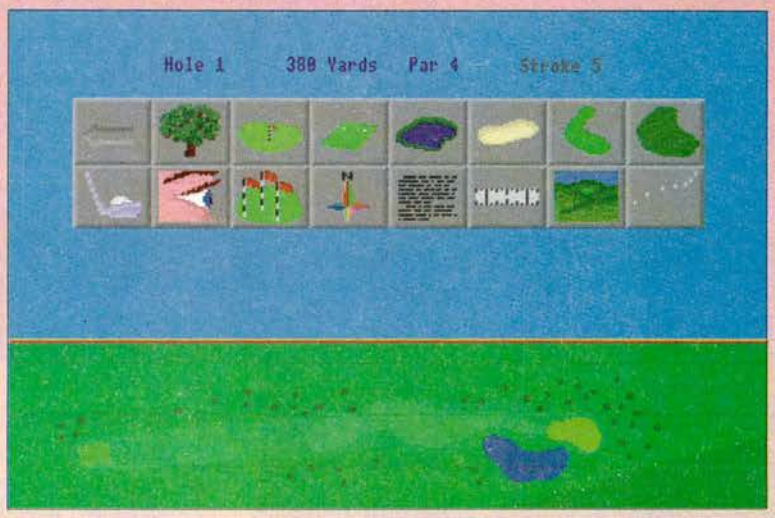
MICRODRIVE Designer has been produced to enhance the features of the standard Microdrive World Edition package, which allows separate courses to be loaded in and played. Up until now, you have only been able to play the pre-designed courses supplied, but now it's your chance to excel.

The designer is supplied on one disk and before you begin you must prepare a disk for your new course. After initial nerves regarding the awesome task of designing a golf course, I started.

You are prompted for the name for your course. The speeds of greens, depths of sand, flag colours and various other essential parameters are all selected and changed simply by using the mouse.

> Rough areas and out-of-bounds all add to the realism of the designer

From there on, you move straight into the designing of your first hole of 18. An overhead view of a rectangular grid – representing hole one is shown at the bottom – while icons represent the various functions at your disposal.



Tree selection is first and you are presented with a choice ranging from Horse Chestnuts to Palms, as well as bracken and bushes. It's a simple matter of placing the trees where you require them on the grid.

The green is next and here 48 different types can be manipulated and rotated in any direction and then put in position.

As the tee size and position are important, I placed it in a position shielded by trees and then on the next icon strategically placed streams, lakes and bunkers nearby.

You can move back from the screen and admire your handiwork, before moving on to plotting the fairway. This is done using a triangular fill routine, which takes a bit of getting used to, but it is very flexible, and your fairway can easily be adjusted, using small handles all around.

Rough areas and out-of-bounds all add to the realism of the designer and you begin to feel a great sense of achievement at this point. One thing to beware of is not to clutter the hole with thousands of obstacles, as towards the end you will be warned that you have too many items placed on the hole.

Landscaping follows next which is complex, so I began with a simple one. But with practice, it is possible to design your hole with varying hills and dips, which will all add to making the hole more of a challenge. The manual does point out that landscaping is difficult and I always like manuals that are honest.

Once the contours of your hole are complete, the length and par of the course can be viewed and adjusted if necessary and the hole position on the green can also be viewed.

Choosing the eye icon allows you – if you wish – to view the course from ground level. The golfer's eye view gives a very good estimation of how your course is now looking and certainly gave me some tips on where I'd over developed certain areas.

The big moment has now arrived – when you can select the club icon and actually play your first custom-designed hole. At this point I realised why it is important to plan ahead – as the manual suggests – and to sit and think ahead of how difficult each hole is going to be.

It's fun trying your hole and watching the ball plop straight into the vast masses of water that you have over-developed your hole to contain.

When you exit from the main designer screen, messages appear outlining your errors and giving suggestions relating to the hole, such as obstacles you may have forgotten, and you are given another chance to go back and make changes.

The improved Microdrive World Edition can be used to play your course in full. The enhancements of this version such as more lifelike trees, the general speed increase in the re-drawing of the screen and the lining up of shots being made simpler, add to making the game an improvement over the original.

All in all Microdrive Designer comes with excellent features and is easy to use. The manual is clear and provides a page of design hints to improve your course. Unfortunately the price is high, but as this is a simulator rather than a game this is justifiable. A must for all golf enthusiasts.

Brett Colley

PRODUCT SPOTLIGHT

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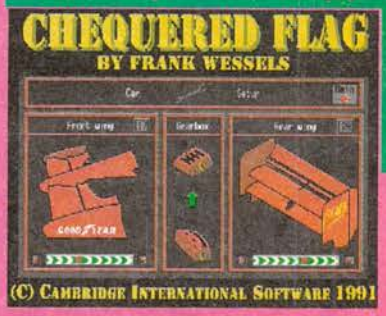

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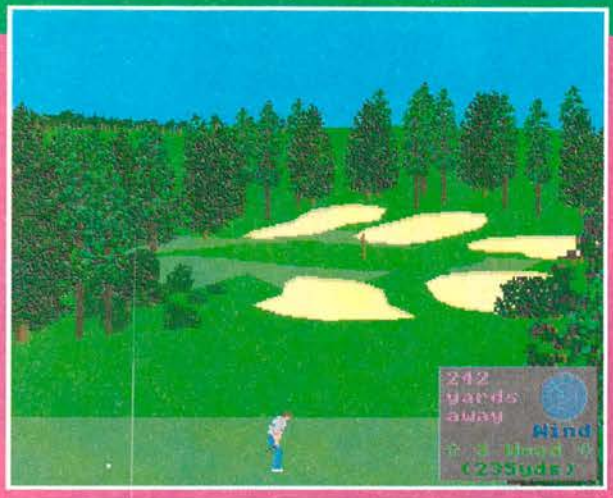

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A. They all play MicroDrive and need to order the upgrade and MicroDrive Designer!!

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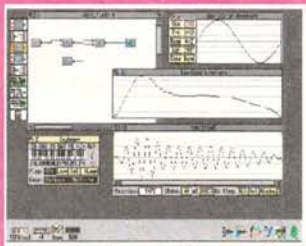

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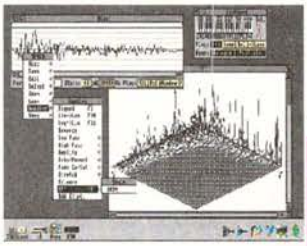

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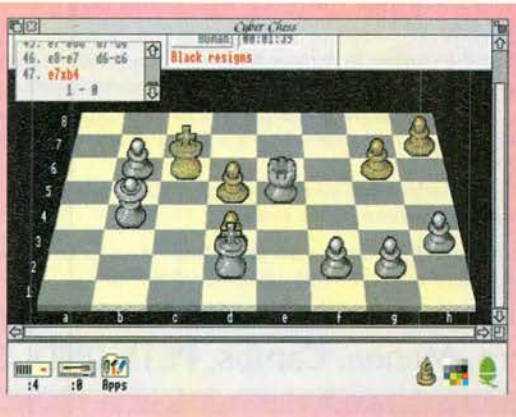
Cyber Chess

...the mating game

COMPUTER chess games have come a long way and the latest implementation of this classic game of war is Cyber Chess. Besides running happily on the Desktop, it has a plethora of features which earlier packages lacked.



Probably the most important is its ability to cater for beginner to master. My own level of skill falls somewhere between these two, but most computer chess programs I've seen presume that everyone can play chess – Cyber Chess make no such assumption.

Not only is there a tutorial mode with on-screen hints, analysis and advice, but there are also 100 beginner levels to work through until you've mastered all the rules.

Although I could beat some of these levels with my brain in neutral, others were slightly more taxing. The tutorial mode is extremely useful if you're a real novice and extra advice is provided in the two manuals.

The Chess Tutorial contains a clear, concise explanation of the rules and how to play while the Owner's Manual makes personalising your game setup very easy.

Graphically Cyber Chess is excellent, though shadows cast by the pieces might have been a nice addition. However, this is a minor point which becomes insignificant as you spend more and more time wondering why your pieces are disappearing so quickly. You can opt for a 3D or 2D game and you can rotate the board to change your viewpoint too.

Rather than the pieces jumping magically from one square to another, they slide, rather majestically, around the board. When a piece has been captured, the disgraced object slides away into oblivion, with a satisfying thud as accompaniment.

Sound effects are used sparingly with appropriate clicks at relevant moments – sounding uncannily similar to those in Holed Out – but there is no background music. The use of stereo sound, however, and the sound muffling when the chess window is covered by another window, is very good.

Cyber Chess has a variety of modes and it is possible to play either a computer or human opponent – it is even possible to watch the computer play itself. All the rules of chess have been included in this version – even *en passant* and castling are included.

As the game is fully multi-tasking, you can have several games running at the same time which provides a good way to practice strategies, specific openings and so on. The range of facilities has been well thought out and are well worth experimenting with.

Without doubt, Cyber Chess is the best game of chess on the Archimedes – with 3D graphics and more add-ons than Michael Jackson, Cyber Chess will give hours of satisfaction and frustration for pawns and knights alike.

Raj Sinha

> Cyber Chess is the best game of chess on the Archimedes

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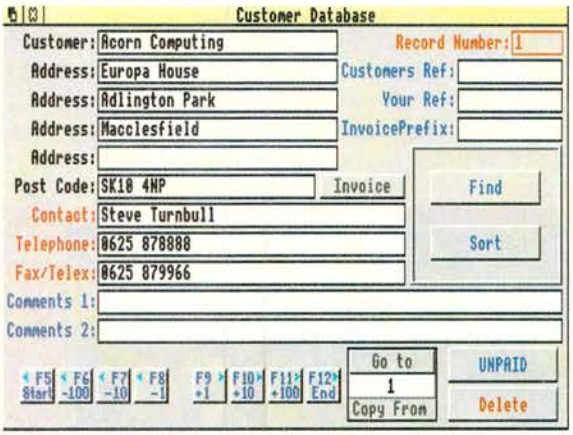
Prophet



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See the reviews in Archive Magazine May 1992 - *if Acorn were to market a business package then Prophet would be one of the essential parts.*

...and Risc User Magazine July 1992 - *Invoicing is a joy to use...anyone requiring an accounts package would do well to look at Prophet...it fulfils all my needs for now and the future.*

...and Archimedes World September 1992 - *what makes it the best is its ease of use...comprehensive, fast, brilliant!*

...and Acorn Computing October 1992 - *the manual proved to be the most readable computer handbook, the first in many years that I have read from cover to cover...give Prophet full marks.*

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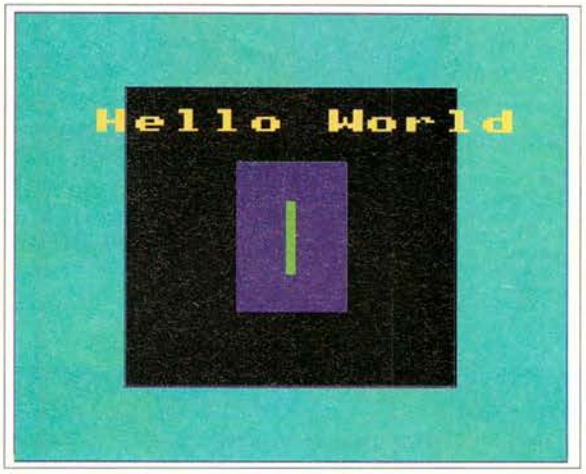
Macro knowhow

Barry Mallett takes you through the principles of Schema's spreadsheet macros



● *Drawing pictures using Macros*

THE easiest way to produce a set of actions which can be replayed at a later date is to create a macro – or a user-defined function. Command macros automatically carry out a planned sequence of actions, such as choosing commands or entering data.

They can be created with the Capture macro recording facility accessed via the Schema iconbar menu. This facility stores each action you perform on the spreadsheet and records them in a macro. This macro can be replayed at later and your actions repeated automatically.

The macro language within Schema is a fully featured programming language, modelled as a subset of BBC Basic. Every macro has the following components listed in the order they must occur:

- A header line
- One or more local declaration lines – optional
- One or more statements
- A terminator line

The header consists of the system word *macro* and an arbitrary macro name. This can then be followed by a list of one or more parameters. In the example you will see that the following line is added:

```
macro Grand()
```

A local declaration consists of the system word *local* followed by the names of one or more local variables and arrays. Statements can take a number of different forms.

One type, which must always be present, is the return statement which gives the value to be delivered by the macro. It starts with the symbol = instead of a more conventional keyword. The terminator line is always the system word *endmacro*.

Probably the simplest macro I can think of is the following:

```
macro new
=5
endmacro
```

This puts 5 in the calling cell. A better example may be:

```
macro mort_all
local a,b,c,d,e,f,g,h,i
a   =   input("Client name(s)",
"Enter name(s)","Mr and Mrs W B
 Erzandmine","OK","Cancel")
b   =   input("Age","Male age",
"25","OK","Cancel")
c   =   input("Age","Female age
","23","OK","Cancel")
d   =   input("Total mortgage a
mount","Enter amount","40000","
OK","Cancel")
e   =   input("Existing mortgag
e amount","Enter amount","15000
","OK","Cancel")
f   =   input("existing monthly
 endowment premium","Enter amou
nt","40","OK","Cancel")
g   =   input("Additional mortg
age amount repaid","Enter How m
any years?","23","OK","Cancel")
h   =   input("Interest rate","
Enter rate","15.40","OK","Cance
l")
E1  =   a
E2  =   b
E3  =   c
E4  =   d
E5  =   e
E6  =   f
E7  =   g
E8  =   h
=0
endmacro
```

This is a very simple macro which calls up small question and answer boxes and places the answers into a spreadsheet in particular cells. Looking through it you can see that each of the input lines creates a small input box which has various titles.

The first is to enter name(s), the second to enter the male age and so on. When all these have been completed it then places the results into particular cells within the spreadsheet.

Note the use of OK and Cancel at the end of each input line allowing for two small click boxes to be included in each of the edit windows.

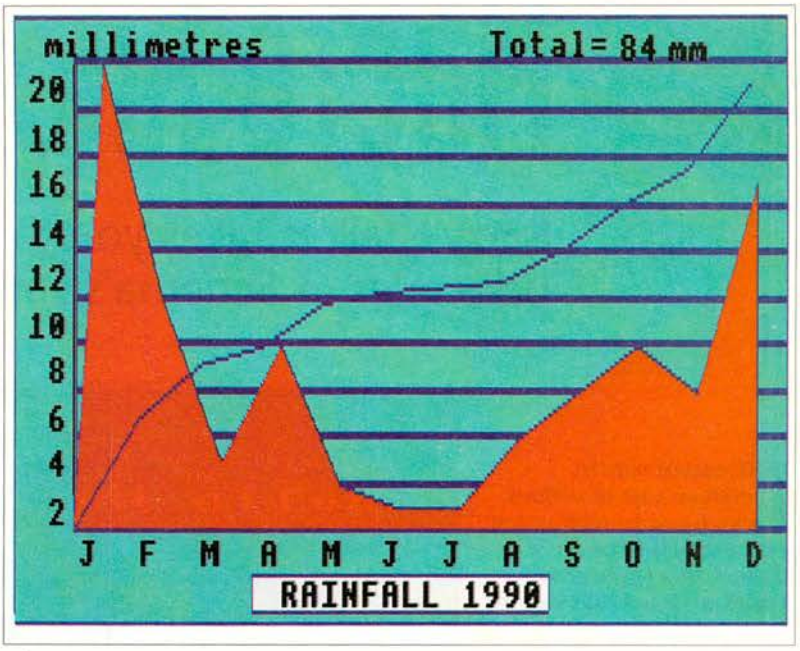
This particular macro, with an accompanying spreadsheet, was written for a company offering mortgage facilities. With a little manipulation you can see how it could be used for creating standard formats for invoices, receipts, holiday booking forms, timesheets and indeed any amount of standard forms which always require the same sort of information.

To complete this series let's use a very simple macro which combines the IF, THEN, ELSE which work like BBC Basic commands.

```
macro test
local a,b
a=a8
IF a=5 THEN
b=0
ELSE
b=5
ENDIF
a="Good Bye"
c8=a
=b
endmacro
```

The header shows the macro is called *test* and it declares two local variables *a* and *b*. The contents of cell A8 is put into *a* and *b* is set to zero if *a* now equals five otherwise it ➤

> Command macros automatically carry out a planned sequence of actions, such as choosing commands or entering data.



● *Graphs can be constructed easily*

➤ is set to five.

You can work the rest out for yourself. I hope that this and the earlier articles have given you an insight into the many capabilities that sophisticated spreadsheet packages can offer and has let you glimpse the wider world of their macro languages.

We have created a macro we can call up at any time

Creating macros: A step-by-step guide

By way of example let's make a small picture using the capture method. Open a new spreadsheet and, via *Menu->Default->Evaluation*, select manual and click on OK.

Via the menu on the Schema icon, select capture macro and type in Grand and press Return. We have now told Schema that whatever we do next, record the events and save them in a macro called Grand.

As you complete the entry into each cell a picture will start to appear. I will explain this after we have captured the macro.

- Select cell A1 and enter
  `GOPEN(0,100,150,500,600,0,0)`
- Select cell A2 and enter
  `BOX(A1,0,0,500,600,0xffff00ff)`
- Select cell A3 and enter
  `BOX(A1,100,100,300,400,0x000000ff)`
- Select cell A4 and enter
  `BOX(A1,200,200,100,200,0xff0d0dff)`
- Select cell A5 and enter
  `BOX(A1,245,250,10,100,0x00ff00ff)`
- Select cell A6 and enter
  `FONT(A1,"SYSTEM",35,35)`
- Select cell A7 and enter
  `TEXT(A1,70,440,"Hello World",0xffffff)`

Now go to the Schema iconbar icon and select End Capture – this stops Schema from capturing any more data. Open the Schema Edit window and Menu-Macro-Store the macro, which keeps the macro for future use.

We have created a set of commands which create a particular picture and a macro that we can call up any time to create the same picture.

If for example we select Cell B2 and via the Schema Edit window menu Macro-Load and select Grand and Return, we replay the commands we created earlier but this time using only one cell and just one command – a macro.

Here's what the lines of the macro do in detail:

Opens a window in a specific position and of a specific size. Try it by selecting cell A1 and press Return.

The numbers specify a position and size (100,150,500,600) and are in pixel dimensions or os units. Each unit is equal to 1/180th of an inch – so 180 would be 1in long. The first two values specify a position 100/180in from the left hand edge and 150/180in from the bottom. The window width is 500 while the height is 600.

```
BOX(A1,0,0,500,600,0xffff00ff)
```

Fills the window with light blue. *A1* indicates that the box command is relevant to the window created by the GOPEN contained in cell A1 and 0,0,500,600 indicates the dimensions of the box relative to the GOPEN.

```
BOX(A1,100,100,300,400,0x00000000)
```

This cell contains a similar box statement but notice that the position and colour have been changed. This should give you a black box in the centre of your picture.

```
BOX(A1,200,200,100,200,0xff0000ff)
```

Another box in the centre of the picture this time coloured dark blue.

```
OX(A1,245,250,10,100,0x00ff00ff)
```

This time we have put a box across the centre of our inner blue box in green.

To add text to the window we first have to define the size and font of the text. I have chosen for this example the basic system font available on all Acorn machines – FONT(A1,"System",35,35)

Nothing happens when you enter this because all you have done is set up the font and size. Now we need to tell it what to print and where. Further options depend on the fonts you have available you could, for example, substitute System with Trinity.Bold.

```
TEXT(A1,70,440,"Hello World",0xffffff)
```

This will display across the centre of your picture the words *Hello World* in white. The first two dimensions again give the starting point followed by the string followed and colour.

If we enlarge the Schema Edit window and then, via Menu->Macro->Load, load the Grand macro you will see that each line you entered has been formed into a table. Notice how the macro name, local variables and end macro details have been added. You now have the opportunity to modify/tailor the macro to more specific tasks.

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Compatible with RISC OS 2 and 3. 4MBytes RAM minimum recommended

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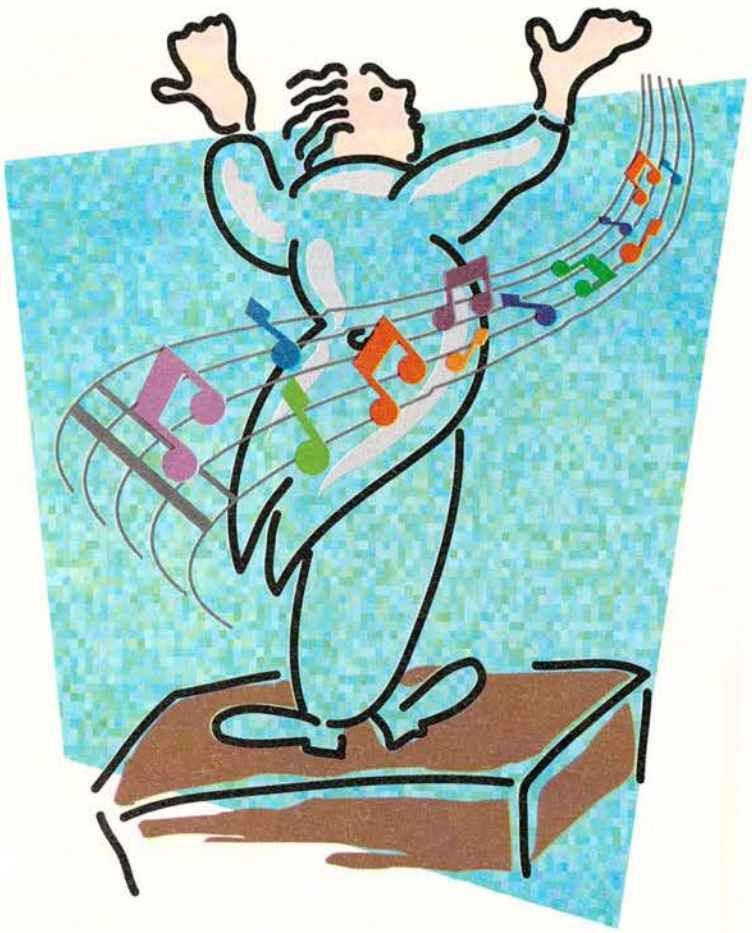
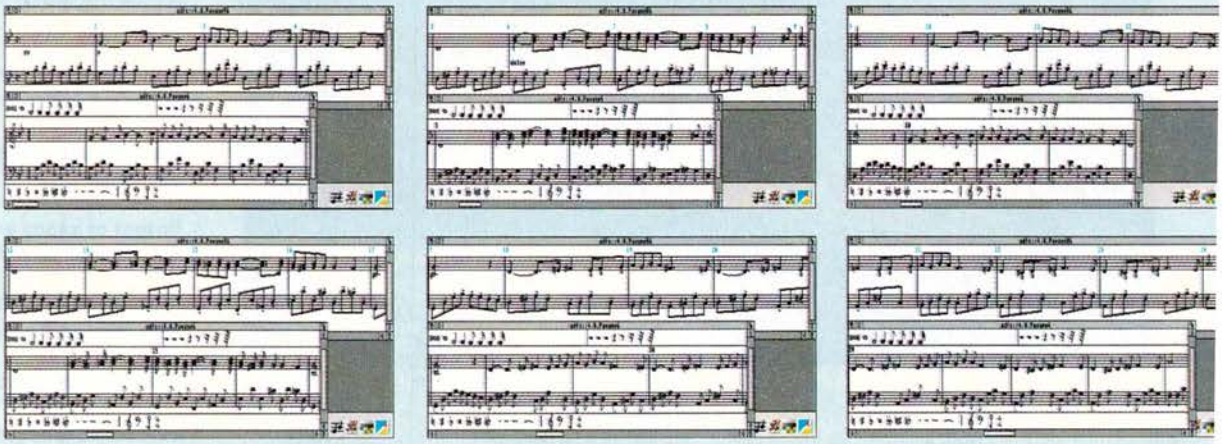


That's

Ian Waugh talks yo

ENTERING music into Maestro is fairly easy as long as you follow a few simple guidelines. The first step is to see how many staves you need. Although you can enter more than one music line on to a stave, if you are entering a three-part fugue, for example, you may find it easier to use a separate stave for each part.

Having said that, Maestro supports only four staves but eight voices, so complex pieces will require more than one voice per

Fauré's Pavane

We covered some of the basics of notation last month and we'll be looking at further aspects of it next time but for now let's enter a real piece of music. I've selected Fauré's Pavane because it's a canny tune as they say up North and it highlights several aspects of entering a score into Maestro.

The figures show the music in Rhapsody and Maestro format. Rhapsody owners can, of course, enter the score too. The Rhapsody version looks similar to a printed score and you can see how the Maestro layout differs.

Check the score every few bars to make sure everything is correct. The main points to watch out for are listed by bar numbers:

Bar 1: Maestro doesn't beam the notes, so be careful t enter the correct durations. You can't enter dynamic mark ings – other than a global volume setting – or staccat notes.

Bar 2: The astute reader may have realised that the tie notes could be written as a quarter note with a double do These are a lot easier to enter, requiring only two symbo as opposed to four. However, the method we've used closer to the way the music would be written and it's easie to read. Use double dotted notes by all means, but watc the timing. When entering the 1/16 notes, make sure the are slightly to the right of the 1/8 notes in the bass clef.

ıe score

ırough putting music into Maestro

stave. But let's take things a step at a time.

Enter the number of staves you require then insert treble and/or bass clefs as required by dragging them to the stave. Select a key signature and then a time signature from the menu and insert them into the score using the key and time signature icons.

To insert a note or symbol, you simply drag it on to the score. To delete a symbol, you must place a duplicate of the symbol exactly over the one you want to delete and click the mouse button. Watch you don't move the mouse as you click, otherwise you could end up with two unwanted symbols.

So you click the score into place, select suitable instruments, tempo and volume settings – see last month – and then play.

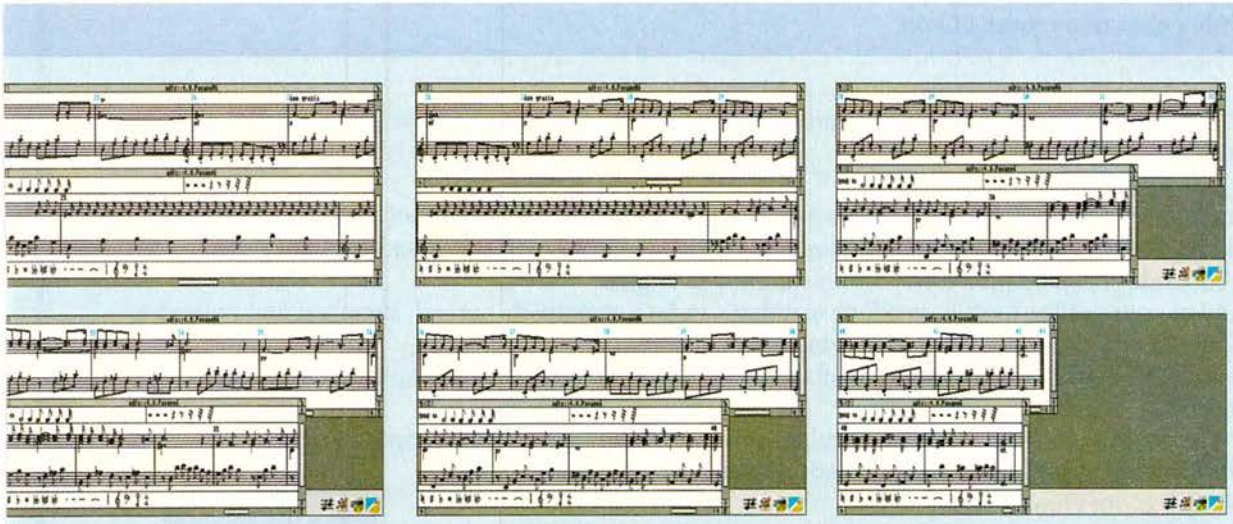
What you have to keep in mind is that Maestro will let you insert a note simply by clicking it into place between two others – it opens a space for it. It's up to you to put the notes in the right places and to see they are aligned correctly vertically.

Maestro will play the score exactly as it's been written and if the notes are out of alignment the results will be unpredictable.

The best way to enter a score is to do the stave with the most notes first and then align the notes on the other stave(s) to it. Don't forget to insert bar lines.

● *Next month we'll be looking at some more complex features of music notation.*

KEYNOTE

Although you can see more of the score in Mode 16, it's far easier to enter a score in Mode 12.

KEYNOTE

You can specify the direction of the stem by pulling a note down on to its position or pushing it up on to it. Although this has no effect on the sound it produces, it can make the score easier to read.

Bar 6: Maestro doesn't support text. The double notes look like 1/16 notes in Maestro but they're not. Make sure you enter the correct durations. Don't forget you need two ties for these notes and a dot for each.

Bar 8: Maestro handles two parts per stave – the G in the treble clef – quite easily. Again, just make sure the notes are correctly lined up.

Bars 18, 20, 23, 24: Maestro doesn't support triplets, but we can come close by substituting a 1/16 + 1/16 + 1/8 note rhythm. The triplets in Rhapsody aren't written exactly as they would appear in printed music. Rhapsody users make sure the third triplet is to the right of the last 1/8 note.

Bars 25, 26: Rhapsody lets you define trills. In Maestro you must write each note out in full. You may be tempted to use even shorter notes, but be careful because Maestro can hiccup on playback – unlikely to be a problem on ARM3 machines.

Bar 26: The F natural in the lower clef (temporarily changed to a treble) is correct.

Bars 26, 27: In proper music, changes of clef are inserted before the bar line. Maestro places them after.

Bar 33: The Ab held over from bar 32 should still be in force in bar 33 but neither Maestro nor Rhapsody apply it. It is, therefore, necessary to flatten the second A again in this bar.

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Painting with numbers

Steve Bruntlett replaces his paintbrush with a mouse

OVER the next couple of issues we shall be exploring Paint, which comes with all Acorn's Risc OS machines. It has basic features common to other painting packages and some will be used to start on a landscape in this first tutorial.

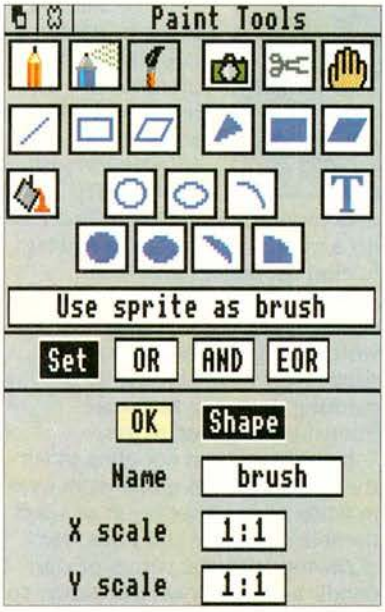
Painting packages work on the principle of filling pixels in a colour selected from the palette individually or via one of the tools. A pixel is the smallest picture element of a computer image, of which there are 162,640 on a typical Mode 12 screen.

Now let's get down to work. If you're using a floppy-based system it's useful to copy the Paint program – and the System folder – from your Applications disc on to a labelled blank formatted disc, so that you can keep everything together. Follow the instructions in your manual to do this, making sure you also copy the !System folder.

Click Menu on the palette icon, move up to Mode, then slide right for the mode selection menu. We shall be concentrating on 16 colour graphics for the moment, so select Mode 12, or if you have a multiscan monitor select Mode 27.

You can work using the 256 colour palette in Mode 15 if you wish, but use Mode 12 for this and the next tutorial. Click on !Paint, which will open up an untitled Sprite file window.

Having double-clicked on !System and then on !Paint using the left-hand mouse button, you should see the Paint icon on the icon bar at the bottom of the screen next to the palette icon.



● *Changing the brush*

If you click Menu on the window the Paint main menu will pop up with options for Info, Save, Create and Display. Move the mouse pointer down to Create and right to open up a Create Sprite window.

If you have Risc OS 3 the Create window automatically appears. This requires you to type in a name, such as Landscape1, and then determine the size of sprite you want.

To produce a sprite big enough to fill the window enter a width of 618 and a height of 234, leave *mask* empty at this stage as you don't require a transparent mask for the sprite – on Risc OS 3 the size of the sprite is automatically set to the full screen size.

Click on Palette, as you don't want to use the default desktop palette, and finally click on the OK box. With Risc OS 2 this will produce a white rectangle in the Sprite file window with *landscape1* printed underneath. This is not the final size. Double-click with Select on the white rectangle and a slightly larger window will appear.

On Risc OS 3 you'll find that the sprite window, colour palette and toolbox all appear automatically when you click in the OK box of the Create window.

The default window working area is still not the final size – you can reach full size by clicking on the top right hand corner of the window. You should now be faced with a full window screen. If you want to see the icon bar for filing and the like, press Select on the box in the bottom right hand corner of the frame and drag the bottom frame of the window up to reveal the icon bar.

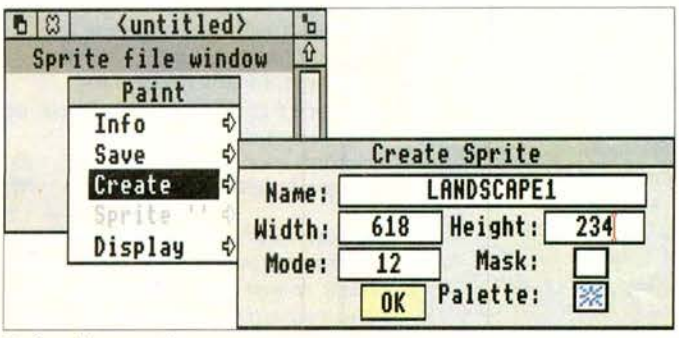
If a full screen picture area is what you're after set the width to 640 and the height to 256 when creating the sprite.

> Painting packages work on the principle of filling pixels in a colour selected from the palette individually or via one of the tools

Putting brush to canvas

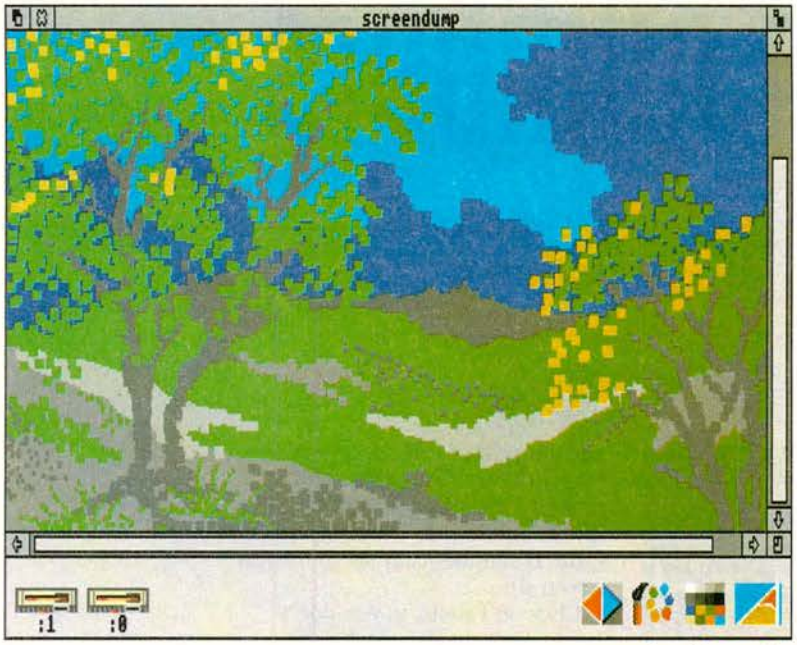
If you press the middle mouse button a full Sprite menu will appear allowing you options for Info, Save, Paint, Edit, Zoom, Grid and Print. The User Guide covers these in detail.

Move down to Paint and across to *Show colours* and



● *Creating a sprite*

● *The tools at your disposal*



● *Simple landscape created with a brush*

➤

press Select. This will put up a Colours window showing the colour palette for the picture. This is still the default palette, as you haven't defined the new one yet. Select the green which will have a number 10 on it as well as a white border.

Click on the cross to the right of the top left hand corner and the Colours window will disappear. If you want it available all the time drag it into a corner of the picture out of the way.

With *Show colours* selected and the Colours box on screen you can select *Small colours* from the Paint menu which will reduce the size of the Colours window by a third.

Any window or menu can be dragged to a new position by keeping Select pressed while over the title bar of the window or menu then move the window or menu to its new position and let go.

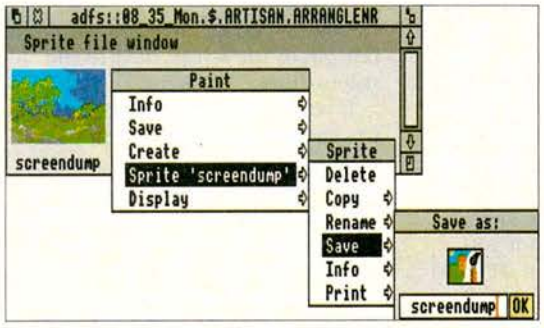
Press the Menu button to bring back the Sprite menu, select Paint again move across and click on *Show tools*. This will pop up the Paint Tools menu – again covered in the User Guide.

Select the brush icon and an extra section on the Paint Tools menu section will appear showing details of the brush shape you are using.

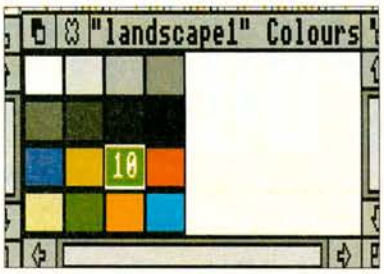
The standard brush shape is a sprite consisting of a black oval with a white outline, a circle on Risc OS 3. It can be used as it is, or by clicking on *shape* you can use the solid brush shape in the colour previously selected. Try doodling with it and you'll find that it's a trifle large for a brush and lags behind the arrow cursor a bit.

The size can be reduced by changing the X and Y scales to 1:2 which will give you a reasonably sized brush with which to start painting. It also gives a more immediate response in use.

If you have been doodling to try the brush out then either paint over in white with a large brush or select the solid rectangle and press Select at the top left hand corner of your doodle and pull down a rectangle to cover it, inverting the colours as you do so. Press Select again to complete the rectangle. Now you're back to the white screen.



● *Saving your work*



● *The standard palette*

A basic landscape

To start work on your landscape select a green brush and draw a continuous horizon across the screen using the slider to get at the right hand bit of the screen hidden by the frame.

If you have created a full screen sprite, select the fill icon – a tipped paint tin – from the Paint Tools menu and press Select below the horizon line to fill in the grass area of the picture.

You can use the same brush to draw in some mountains using the range of greys to draw the outlines and then filling them in with the fill icon.

If there are any gaps in the lines or enclosed areas on or off the screen the paint will leak and join up with any other areas of the same colour, possibly losing a lot of work in the process.

As there is no undo facility in Paint you'll have to rescue the picture by repainting parts of it as you would if you were oil paints.

This may seem very crude, with the painting being restricted by the palette, the size and shape of the brush and the flatness of the colour. However, effective pictures can be produced using simple brush shapes such as the illustrations here.

You don't need to be photographically realistic to produce a good landscape. There are ways of producing successful pictures even with a limited range of tools and facilities.

● *Next month we'll see how similar pictures can be produced with a square brush, as well as introducing shading, brush definition, palette changing and perspective.*

Working conditions can improve results

Take the same care over preparation as you would when painting normally. Give yourself plenty of room, make sure there is plenty of light, organise your reference material, make sure you are sitting comfortably next to your kitchen timer.

You'll need that, because if you don't have one time will fly by and you'll land up with a bad back and strained eyes. Make sure you are sitting in a good hard-backed chair with plenty of room for arm movement and with the monitor brightness turned as low as you can cope with.

Set the timer for 30 minutes and make sure you have a rest when it goes off. Save your work when you finish as preferably every 15 minutes or so, just in case someone trips over the computer lead.

Saving your work involves opening a directory window on the disc you are using to store pictures, popping up the Paint menu and selecting the Save option.

Enter a filename of up to 10 letters and drag the sprite icon to it before letting it go and saving it to disc. See the User Guide if you're not sure about this procedure.

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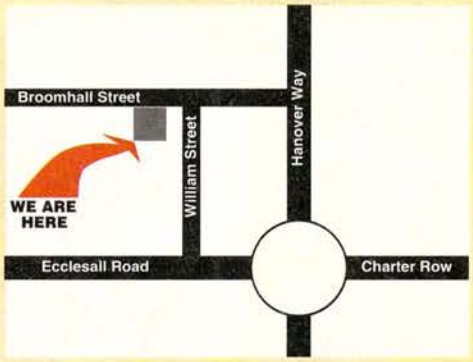

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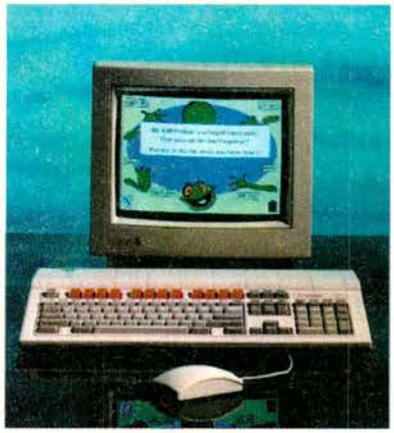

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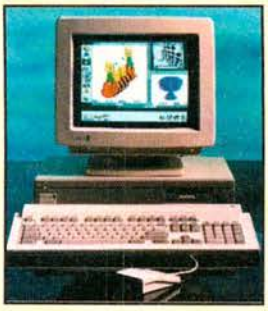

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The original Arthur operating system came with a diary application; unfortunately Risc-OS lost that very useful little utility. !Diary offers you all that the original program had and more: you can browse and search through your diary, customise it to remember family anniversaries, and create diaries and print out planners for next year long before they are available in the shops. You can also print out your appointments for any given month or the whole year. You can now use any Font, mark dates set alarms to remind you that you have an appointment. etc,etc

SG002 FLAGS

SG001 EGYPT

!Condense £8 +vat!

Condense is a Spritefile Compression utility, it will allow you to store more files on disc or in memory. Unlike most routines unpacking is not done on loading, but as and when you are ready to display or use the Sprite(s) in the spritearea. This means that a large number of sprites can be loaded into memory, unpacked to the same 'User Sprite Area' and plotted using normal Acorn Sprite Calls. An example of this is in a demo file (!Condemo2) on the disc and can be seen running. This loads in approximately "THREE MEGABYTES" of sprites but uses just over 400 Kilobytes of discs space or computor memory. Ideal for use within your own programs for really fast sprite and screen manipulation.

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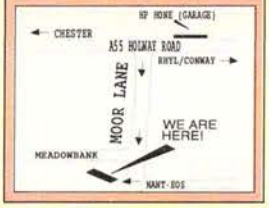

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The short list

Jo Giles looks at the pluses and minuses of another batch of software releases

Professional Tools Pack: Enhance your computer's life style

THE Professional Tools Pack is a selection of utilities designed to enhance the quality of your computer's life-style. The nine programs cover many different aspects from the infamous FileCore error to enhanced screen modes. Here are details of some.

- **Cache** is for easy control of the ARM3 ram cache. Just clicking the icon makes the switch between speeds.
- **ColourExt** works with the ColourTrans module, from version 0.60 onwards which means Risc OS 3. The newer colour module allows shading of colour by dithering if requested by an application.
- **FileCore** is an application that corrects the awful *FileCore in use* error. When this happens you can do nothing except re-boot the machine and any unsaved data is lost. This program fixes things so that if the error occurs the ADFS is re-initialised and you can carry on as normal. This is only needed for Risc OS 2.00.
- **HotKey** allows you to attach an operating system command to a particular key press, the command being carried out every time you press the key.
- **RMATrap** is mainly of use if you have any naughty games that delete modules in order to gain extra space – something which is especially annoying to owners of 2Mb-4Mb machines.
- **ScrnStore** blanks the screen when two keys are pressed or after a certain amount of time with no keyboard or mouse activity.
- **SlowDown** reduces the speed at which your machine runs. This might seem a pointless exercise but in fact can be handy – usually when playing games.
- **SpeedROM** is the standard machine speed up that's been published in numerous places, but this time with lots of frills.
- **VidExtend** the final program in the set gives you a high resolution screen mode with an ordinary monitor. The vertical resolution is doubled but there is a certain amount of flicker which depends mostly on the persistence of the phosphor dots in your monitor.

This is an interesting selection of utilities, all of which have a consistent user interface, animated iconbar displays and their overall design means that they can be used both in and out of the Desktop.

For any given machine only some will be useful but to someone afflicted by addictive games that unplug modules RMATrap on its own is worth the price.

PRODUCT SPOTLIGHT

Price: £14.95
Supplier: Electronic Solutions, Ceralyn, Maindy Croft, Ton-Pentre, Mid Glamorgan CF41 7ET.
Tel: 0443 430355

Electronic Human Parts: Ergonomic Androids

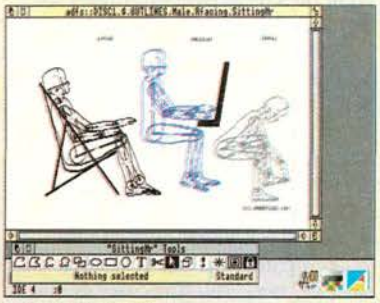
ORIGINALLY developed for secondary school pupils for CAD work these scaled models are a useful resource for anyone involved in design work whether in a school or commercial environment. And, using Draw, they are more than clip-art.

The parts are based on the Open University's Oscar mannequin but scaled in a ration of 1:10. Due to the facilities of Draw the computer lets you manipulate the mannequins to a much greater degree as they can be rotated, scaled, grouped and so on.

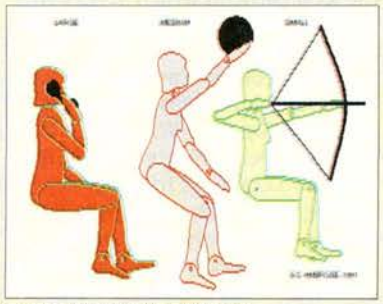
The more adventurous can even animate the drawfiles using a program like Animator from Iota.

This could be used to test all types of concept from medical to ergonomic – the uses are up to you. Chromogem call their mannequins *electronic ergonomes* and these come on two disks as small, medium and large males and females with the second disk showing the filled in shapes of the body parts which can be used for such applications as costume design.

Disk one shows the outline of the limbs drawn to scale and show the measurements and pivot points of various joints and so on while the second disc gives you an idea of some of the implementations of this package. The documentation gives guidelines and some examples of what you can achieve as well. All in all an extremely useful selection of drawfiles.



● *Oscar seated*



● *Mrs Oscar doing things*

PRODUCT SPOTLIGHT

Price: £15
Supplier: Chromogem Designs, 8 Loxwood Close, Orpington, Kent BR5 4PQ.
Tel: 0689 870758

Topic Art: A window for art

IF you have been inspired by the Olympics, or even by the start of the football season, to try your hand at a bit of sports writing, then TopicArt7 could be the answer to your prayers.

This new disk of clip-art features 65 pieces of sports equipment from the layout of a track and field stadium to an American footballer's helmet – the Giants in fact.

All the drawings are in Draw format and in colour and ready to be popped into all sorts of applications – the choice is yours.

You can add, amend or delete as you wish whatever your sporting needs: Cricket, baseball, tennis, snooker or darts. The graphics are large and with the clip-art themed you know where to find your 10-pin bowls next time you need them.

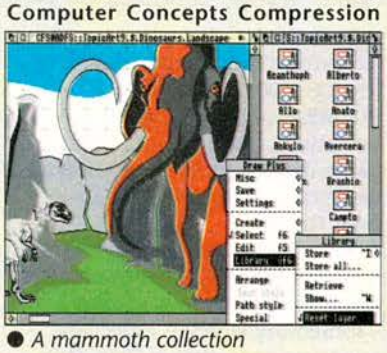
TopicArt9 covers dinosaurs. These ancient creatures have a perennial fascination for children and adults alike. There is always a topic on them in schools and the popularity of the Natural History Museum doesn't wane.

The versatile drawfile format gives you control over the images whatever you want to do and with 53 illustrations to choose from you can create your own pre-historic landscape.

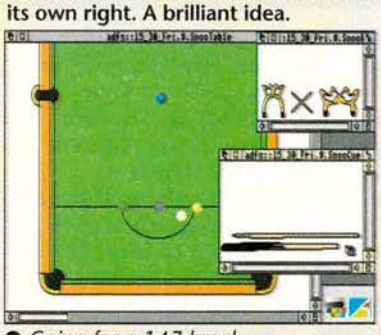
The size of these drawings means that they are archived using Computer Concepts Compression application with the read-only version of CFS Reader supplied on disk – just double-click and then single click on the ADFS 0 drive icon and treat the files in the usual way.

Ferns and landscapes are provided as well as a whole range of creatures. These only have abbreviated file names so identification is down to a bit of investigation and reference books for accuracy.

Of all the TopicArt disks I've seen so far this one is the most complete in its own right. A brilliant idea.



● *A mammoth collection*



● *Going for a 147 break*

PRODUCT SPOTLIGHT

Price: £10 each
Supplier: Desktop Projects, Unit 2a, Heapriding Business Park, Ford Street, Stockport SK3 0BT.
Tel: 061-474 0778

Archimedes Disc Rescue: Saving your work, time and mind

WHETHER you're a novice or experienced computer user, at some time you'll have deleted a file you wanted to keep or found that your normally friendly Archimedes is insisting that your disk map has taken a hike or that somehow a directory has been broken.

What you really need in such a situation is a disk doctor. The public domain contains some possible solutions but Look Systems have entered fray with a first aid kit of their own.

Four programs are provided with the package. **Recover** can be used to recover a file that won't load – just run the application and drag the file or directory on to the icon bar.

Remember to save your recovered data on a new disk – floppy, hard or ram – so that you don't disturb or overwrite any information on the original. Used in conjunction with the disk sector editor it can get at a file that's been deleted.

During the process a text window appears which keeps you abreast of what's happening – the size of each file, errors and so on. This can take some time and you may not always recover all your data in perfect order but the program reads the corrupt disk sector by sector to ensure that most information is saved.

The Archimedes removes all the information relating to a file when you issue the delete command, so you'll need to run **DiscEd** to find the location of the file. This can be done manually but the Find option lets you search for a text or hexadecimal string. Once found you can then use Recover by specifying the system, type and addresses of the file.

Recover can also be used to give you access to an inaccessible directory while **RepairDir** can fix a broken or corrupt directory by simply dragging the directory on to the icon bar icon which gives you a window showing the first entry in the directory.

Root directories can be repaired by accessing the RepairDir menu and choosing the filing system and drive number you need. The ADFS keeps two copies of the directory and RepairDir sifts through both – as long as there are less than 38 entries in a directory – if the copy is different to the original you can edit both in the RepairDir window.

The **FixMap** program comes into its own when repairing a bad disk map or bad free space map. Repairs are achieved by accessing the filing system and drive.

Old format-free space maps are rebuilt from the directory which can be time consuming with success dependent on the directories on the disk not being corrupted too.

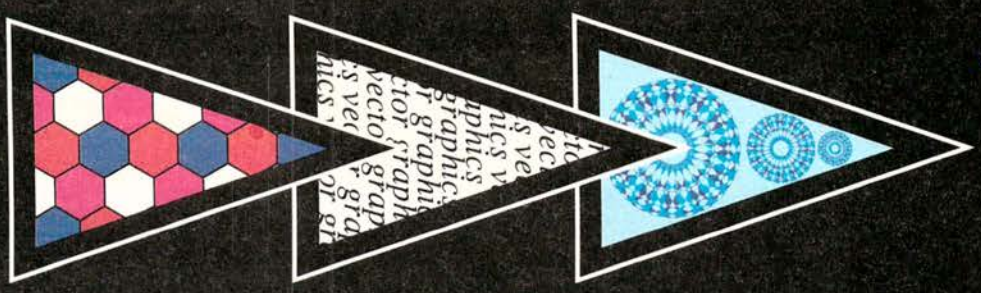
FixMap can be used to try to repair a new disk map as it recalculates any corrupt check bytes or swaps two copies of the map. However, it is suggested that you try to extract as much information with Recover before you try to repair the disk map.

These programs are aimed at the inexperienced user but – despite the hints and tips which appear through the manual – the processes may be a little overwhelming for first-time users.

For people who want to get down to the nitty gritty of repair work **Disc Editor** provides a multi-tasking program complete with gotos, searching, exports and imports of sectors and files as well as access to non-Archimedes formats. In addition is checks, recalculates, reconstructs and repairs boots sectors, map and directory check bytes.

PRODUCT SPOTLIGHT

Price: £35 (inc VAT)
Supplier: Look Systems, 47 Goodhale Road, Bowthorpe, Norwich NR5 9AY.
Tel: 0603 764114



by Jonathan Marten
the author of DrawPlus

Vector

the RISC OS drawing package

Vector's wealth of features includes:

- Highly-compressed saving using a DrawFile-specific technique
- Printing of large documents over several sheets
- Saving of all lines of text as a single text file
- Modularisation of documents into 32 separate layers
- Easy drawing of lines, curves, arcs, ellipses, rectangles and polygons
- Continuation of existing paths
- A facility to define line patterns
- Scaling and rotation of objects about their corners, centres, or any point on the document
- A 256 colour selection box
- An additional unique palette for each document
- Locking of objects for safety
- Undeleting of deleted objects
- Comprehensive facilities for scaling, rotating, skewing, aligning and spacing out of objects
- A choice of rulers and grids
- Auto scrolling of windows
- Compressed Libraries for storing Draw objects and sprites
- Precise ordering of objects (not just Front and Back commands)

Special facilities include:

- Path merging, splitting and reversing
- Interpolation between objects
- Replication - objects can be repeated as many times as required without consuming memory - ideal for repeating patterns
- Radiation - any path can be radiated around a choice of centres - when combined with path merging, amazing results are possible
- Masking - any object can be filled with any other object

Extra RISC OS 3 functions:

- Automatic kerning
- Text and sprite rotation
- Conversion of text to path objects
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FREE DEMO DISC

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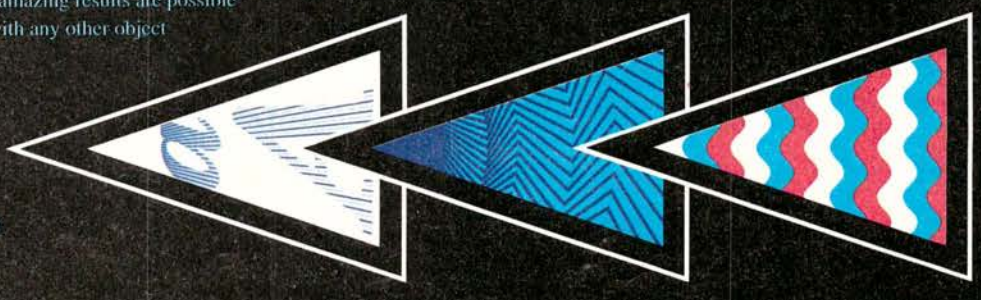


WindowEd: Through the Wimp

Armen Software have released a window template editor that not only handles multiple files but does away with massive menus by including all the options in dialogue boxes.

The PD program, Interface, allows you to add instructions to windows and icons that, with the proper commands, will display them as 3D and control their actions. This allows the clicking of one icon to switch on, off, toggle, select or de-select any number of others in the window.

WindowEd uses Interface thoroughly. In fact it almost over-uses it – all the icons are 3D and there's lots of automatic switching and toggling. It also provides automatic support for Interface within your own windows if you choose to have it. An option in the Preferences window will switch it on and off.

In use WindowEd is very intuitive but only if you know what can be done with windows and icons. On the other hand it's very easy to experiment with the different options and see what happens when you alter them.

The document window displays an icon for each window template. Clicking Menu brings up a list of options allowing you to save the template file, create a new window – only a new window identifier is needed – or you can grab a window off the screen.

This is an excellent utility. After entering a window identifier you get a snapshot pointer – go to the window of your choice and click on it. WindowEd then gets a complete description of the window from the Wimp and duplicates it in the template file.

The final option on the menu leads to a sub-menu where you can delete, copy, rename, save or edit a specific window.

Double-clicking on a window icon displays the window with its current settings. Clicking Menu over it gives you options to move the window to the back, front, close it or centre it. You can bring up the edit window dialogue box or select an icon by number to edit it.

Icons can be created, deleted or edited, but another handy utility lets you grab a copy of an icon just by clicking on it. You can then place the copy wherever you want in the window.

A really useful toolbox allows you to apply normal operations to a window – scrolling, move to back, resize and close.

You can bring in external sprite files so that any sprites displayed in a window will appear on screen. Both the default sprites and the default window can be edited.

There's an autosave option and the program checks to see whether any files within its application directory have been altered when it first runs – a virus check. Apart from the main WindowEd program four other utilities are provided:

- **HotSpot** displays a magnified image of the area around the mouse pointer.
- **MouseLock** constrains the movement of the mouse to vertical or horizontal motion.
- **Bin** is yet another version of the Mac trashcan.
- **Command** is a clever concept. Specify an os command – and these are attached to a window. If a file is dragged to the window the command is carried out on the file.

PRODUCT SPOTLIGHT

Price: £tba
Supplier: Armen Software, Laxton House, Milton Road, Oundle, Peterborough PE8 4AB.
Tel: 0832 273444

!Killer: Blasting those insidious beasts

The Archimedes has its own selection of viruses. Some aren't destructive but are incredibly infectious. On the other hand others can totally kill your entire system.

Until now the Archimedes has been dependent on PD applications but the biggest danger is one of complacency. If you have acquired a PD virus checker or killer, the temptation is to believe that you are now protected.

Pineapple entered the virus scene recently using a program developed and updated by Acorn themselves.

Basically the protection system consists of !Killer and VProtect. The former is an active application which you use to scan disks, while VProtect waits for certain events to occur that might indicate an active virus.

Risc OS 3 users will find the program !KillerROM, a special copy of !Killer, that appears in the Apps directory once it's been run. If you archive your files, !Killer will use ArcFS to examine archives while scanning – you'll also need it to unarchive the items in the Extras directory.

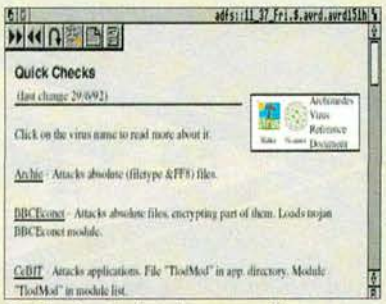
Here you'll find the current version of the Archimedes Virus Reference Document, with detailed information about known viruses. This is supplied in the PD reader version of DEC_Data's ClearView hypertext program. Not only does this make it easy to follow but looking up particular viruses is quick and efficient.

Version 1.37 of !Killer detects 23 families of virus most of which can be kept out of a clean machine by VProtect. This is done by preventing infected !Boot files from doing any damage by checking the !Boot file before it is executed.

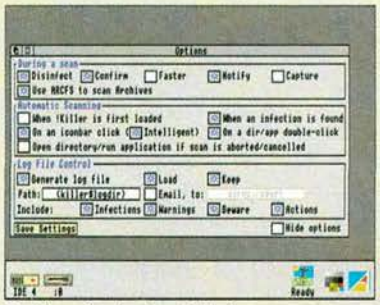
VProtect is intended to be small and unobtrusive and it is. Killer – which is also permanently resident on my hard disk as well as configured to check every disk, directory and application – lets you detect and remove any virus already resident. It also self-verifies so it doesn't become a carrier.

If you don't have the latest version or don't use it, you are courting disaster.

Writing viruses is a game to the people who do it, and it's up to you to help change the rules.


Quick Checks
Archimedes Virus Reference Document
Click on the virus name to read more about it.
Archie - Attacks absolute (filetype &FF8) files.
BBCEconet - Attacks absolute files, encrypting part of them. Loads trojan BBCEconet module.
CyBIT - Attacks applications. File "TrodMod" in app. directory. Module "TrodMod" in module list.

● *Check out the viruses on file*



● *There's plenty of choice*

PRODUCT SPOTLIGHT

Price: £24
Supplier: Pineapple Software, 39 Brownlea Gardens, Seven Kings, Ilford IG3 9NL.
Tel: 081-599 1476

Using Mac hard drives

Mike Cook exhibits his technical expertise

From Apple to Acorn

WHILE looking through Mac User recently I noticed that Sysquest removable hard disk drives are more widely advertised than in Acorn Computing – and at lower prices.

There were 11 advertisements in Mac User quoting either 44 or 45Mb capacity with prices ranging from £295 to £395 with an average of £352. In your June issue there were four advertisements for 42 or 44Mb drives with prices starting at £399 from Watford to £499 from Morley. This, of course, excludes the SCSI interface which is built into the Macintosh.

Apart from the SCSI interface card which I would need to use a Sysquest drive with my A3000, is there any difference between the drives advertised for the two systems? Is there a reason for Archimedes drives being £100 more expensive? – **Anthony Hilton, Tinshill, Leeds.**

● *The Sysquest removable drives for the Macintosh and those for the Archimedes are basically the same. They are packaged slightly differently for the two computers.*

For example the Macintosh one is sized to sit under the computer. There is also a difference in the type of fan fitted.

However, the basic electronics is the same. I have a 44Mb removable drive that I use both on my Mac and my Archimedes by simply swapping the SCSI lead over. I suspect the situation is the same with other SCSI devices as I have an optical drive that I treat the same way.

CDT projects

FOR my major GCSE CDT Technology project I am building a computer-controlled floor robot using the user port. All the programs that access the BBC Micro user port write to a memory address. Is this possible on the Archimedes?

If so, what is the address and the data direction bit? I have heard that it is possible to use an *osbyte* command. How would you execute one in a program? I hope you can help, I have tried everywhere I can think of with no success. – **Chris Hinds, Camberley, Surrey.**

● *The original BBC Model B was fitted with a user port. This was addressed by writing directly to the computer's memory. The hardware for the user port is not fitted on the Archimedes so you can't use the same program.*

However, you can get plug-in user ports from various manufacturers. The port is accessed using system calls which are explained in the accompanying documentation. You need to purchase one of these and possibly a podule backplane before you can complete your project.

Rodent matters

I OWN an Archimedes 310 and was recently given a Q-Tec Mouse which came from a PC. I want to build some sort of adapter so this mouse can be used on the Archimedes but I am unsure of the PC mouse pin-outs.

The Q-Tec mouse has a nine pin D-type connector fitted and I also have an adapter which has a nine pin D-type on one side – for the mouse – and a 25-pin D-type on the other for the PC. This model number of the mouse is the QM-02. – **Gerald Holdsworth, Bexleyheath, Kent.**

● *PC mice are very non-standard. However, you appear to have a serial mouse, but there are different sorts of these too. They work by plugging into the serial port and send and receive messages back and forth.*

Unfortunately, there are a number of different protocols used. What you'll have to do is to find out what protocol is used and write a mouse driver module to patch into Risc OS.

As far as I know only one company has produced a commercial package to do this. Alternatively you could strip the mouse down and remove the serial link and simply feed in the four quadrature signals tapped off the optical shaft encoders. Naturally it then could not be used on a PC.

A bitter pill

I HAVE acquired a Hewlett Packard Graphics Digitiser Tablet – Model 46087B – and was wondering whether it is possible to hook it up to my A310 Risc OS machine.

Having no manual for the tablet, I contacted Hewlett Packard to determine whether literature was available and I was charged £6.90 for a Service and Training Manual ➤

AGENDA

- Using Mac hard disks
- GCSE projects
- Disk errors
- Remaking PC mice
- Monitor problems
- Utilising 8in drives
- Interfacing with tablets

Faulty drive

I HAVE purchased a second-hand disk drive for my BBC B and fitted in a Watford DDFS. The problem is when I try to load or catalogue a disk one of the following errors appears on the screen:

Sector not found at 00/00
Sector not found at 00/02
Drive fault at 00/00
CRC error at 00/00

Is there something wrong with the disk drive or the disk interface? – Osmond Green, London.

● *Yes there is something wrong: It's not working. As to the reason that is another matter. As you seem to be getting a lot of different error messages, it appears that your system is on the verge of working but not quite making it.*

As the drive is a second-hand one I would suspect that the terminating resistor pack is not fitted as the drive might have been used as a second drive by its original owner.

Check to see if there is what looks like an empty IC socket. Most dealers will have a spare pack as they are removed from every other drive.

➤

which does not seem to help.

Could you tell me if I can do what I want and if I need any additional hardware or software? – **John Beard, Scawsby, South Yorkshire.**

● *The problem here is that Hewlett Packard use their own unique form of interface known as HP-HIL. This is a serial protocol similar to the ADB – Apple Desktop Bus – used on the Mac for its keyboard, mouse and so on. What happens is that the computer sends information request codes and the tablet responds.*

In theory it should be possible to emulate this protocol using the serial port or a general purpose parallel port. However, with Hewlett Packard being such a large organisation there is probably little chance that you will find anyone who knows what this protocol actually is with the authority to release it to you.

You can write to Mike Cook c/o Acorn Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.

He will answer any questions about difficulties you are having with your machines, mainly those to do with hardware. If you want a personal reply ensure that you enclose an SAE with your letter.

Does 8 into 5.25 go?

I OWN both a BBC B+ and a Spectrum with a disk drive interface and I have just been given a pair of 8in drives made by NEC. They both have the markings NEC FD 1165A on the rear and a power socket similar to the BBC compatible drives. There is a single lead which has more wires that the BBC drives.

Is it possible to convert this for use on the BBC B+? I know there won't be as much space as the 3.5in but I am interested in trying to connect them. – **R. Barton, HMS Jersey.**

● *There was a company in the dim and distant past – the first year of Model B production – who did produce an 8in drive conversion.*

As I recall this involved some simple modification to the drive, an interface lead and a disk filing system rom. I think the company were called Vogan Products.

Does anyone know where they can be found?

Flicker and crash

I HAVE been using my A3000 for over two years but have suffered a recurring irritant that has at times seen me tearing my hair out in exasperation. I have concluded that the problem lies with the monitor but more than that I don't know.

The first manifestation of the problem was the changing brightness of the monitor which sometimes flickers randomly. When the computer is turned on or off, there is an electronic *phut* sound. I'm not sure whether this is normal but the noise occurs when I'm working on the machine as well, accompanied by flicker.

In addition there is a high-pitched electronic sound that seems to come from the monitor as it stops when it is turned off. Any of these symptoms usually leads to the computer crashing especially when I'm running memory hungry applications.

The crash starts off with the now familiar phut and the screen freezes with distortion spreading across it.

The problem comes and goes and I would be grateful if you could give me any idea what it is, but I guess the solution is a trip to the hardware vet. – **Paul Rainbow, Penarth, South Glamorgan.**

● *Are you sure where this* phut *is coming from? It sounds very much like the sound my monitor makes when it's turned on – a combination of the switch mode power supply and the static generated on the screen and it is quite normal.*

However, the flickering is not, and is most certainly caused by an intermittent connection. This is normally due to a faulty lead or connector in the video or power circuits. This causes interference and the computer to crash.

Intermittent faults are difficult to cure but you should get the best results from an Acorn-approved service centre. Contact Acorn (0223 245200) the one nearest to you.

Monitor extra

I HAVE had a Model B micro since 1984 and have had a lot of good use out of it, I used it first with a TV then bought a Cub monitor, which was a great improvement.

Like many BBC Micro owners I am now thinking of upgrading to one of the 32-bit machines especially if the rumours are correct and a budget machine is going to be available. I have a few questions about it which I hope you can answer.

I'd like to use my monitor with it and I remember that you gave some instructions about converting a Cub monitor for use with analogue RGB output.

If I can't use my monitor is there any way I can use a TV?

Apart from playing games, sometimes I mainly use my Beeb for letter-writing and reports.

How much additional software would I need to buy to get good quality output? I have an old Epson FX80 will that be enough?

I realise you may be tied in what you can say by agreements with Acorn but I'd appreciate any advice because I'm under a lot of pressure to upgrade to an ST or Amiga. I don't want to make the mistake of investing in a machine that's going to have a limited lifetime. – Patrick Coleman, Scarborough.

● ***You're in luck, the embargo for information about the new machines was up to the 27th August. So I can provide all the information you want. You'll probably have read the complete article already but your questions bring up some other points.***

The A3010 will plug into any TV but the quality of the result is very dependent on your TV – if you get a poor image it's your TV not the A3010. An 18in portable colour TV with a Scart socket is probably the ideal and you'll get a rock solid monitor-quality image using one. The Family Solution version of the A3010 has a good wordprocessor bundled with it and it will work with your printer. But you'll have to get a PC style printer lead instead of your BBC Micro one.

You could by an Amiga or ST but frankly the Atari market is on the way out and it's unlikely the new Falcon is going to revive it.

The Amiga is good at a lot of things but for pure ease of use and for the quality of software you get with the machine itself the Arc is certainly the superior machine – it probably has a better future too.

The BBC Micro has proved very durable, no machine in its class or vintage has matched it, the 32-bit machines have the same tough heritage.

Assuming it's the right model you could convert your monitor for analogue operation, but the quality is not good. You'd be better off with a new monitor or a Scart TV.

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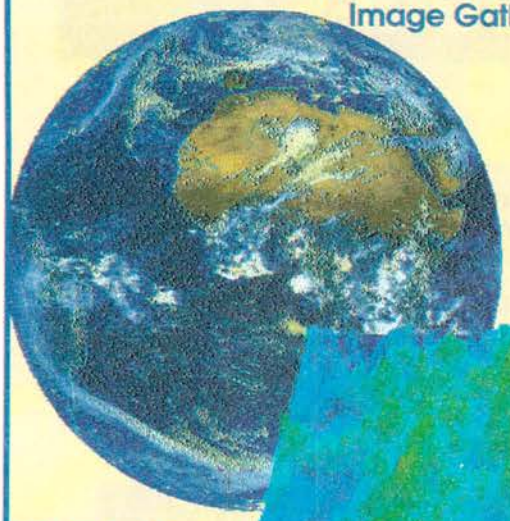
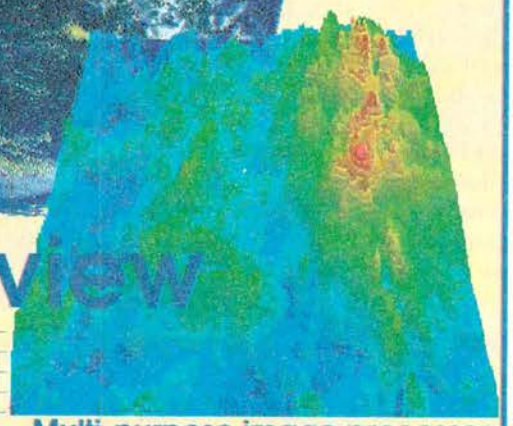


And . . .



PDS view

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- All machines are supplied with a **Speech Rom** as standard!
- They include **additional safety features** such as steel re-inforced keyboards
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- Our new BBCs carry a 6 month **warranty**- probably twice as long as a repair warranty; plus, the guarantee is for the whole machine, not just on the component which has been repaired!

Monitors

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BBC Pack 3 .....£323.36
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These machines were originally Manufactured for export to America. Having now shipped them back we have to make various Modifications, which includes fitting a U.K power supply and TV Modulator, for effective, safe use in the U.K. So they are not "straight from the factory" but nonetheless they have never been used.
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- Official Local Authority orders welcome or Independent schools, headed note paper with Headteacher's signature
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Whilst every effort has been made to ensure the accuracy of this information we reserve the right to make changes & alterations without prior notice. Please note that these computers may not be compatible with all UK BBC B software, nor with hardware add-ons. (Prices are correct at the time of going to press. E&OE)

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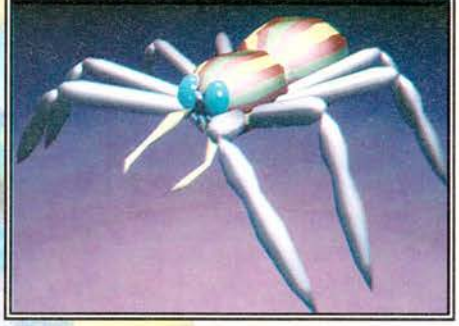
ProArtisan £105

First there was the *Artisan* and *ProArtisan* series – still the most widely used art packages in education today. They feature an intuitive icon based menu system that has proved usable by children as young as three years old. Yet they are powerful enough to be used by serious artists.

Artisan is in its second generation *(Artisan II)* and provides many useful and unique features. This is the one for younger children and anyone interested in textile design. ProArtisan is a more sophisticated package but retains the familiar interface of Artisan II – an easy upgrade path.

Illusionist £99.95



No, this isn't a bird eating spider and no *Illusionist* doesn't replace *ProArtisan*. *Illusionist* is a graphics package for those who don't have the skills or inclination for free format painting.

With *Illusionist* you create a wire frame outline of your image using pre defined shapes. In addition you can define your own shapes or distort any existing shapes. This makes it very easy to generate images even if you can't draw a straight line. You can assign colours and textures to your objects. You can even give them texture maps. A texture map is any Mode 12 or 13 screen. So you can use a scanned or digitised image, a painting – literally anything!

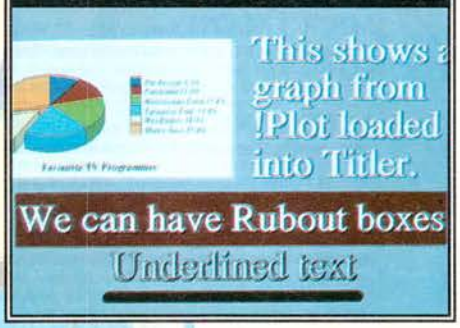
Render Bender II £99.95

NEW REDUCED PRICE

Render Bender II is another top rated graphics package from Clares. Images are created in a similar way to *Illusionist* by defining objects using pre defined shapes. You then add colour, texture, lighting etc. *Render Bender* images can include glass and mirror objects as well as shadowing. *Render Bender* actually calculates the path of light from its source to the imaginary eye at the viewing position. This path takes account of any reflections and refractions.

In addition *Render Bender* can create animated sequences very easily. You can either give objects a formula to control their movement or you can give start and end positions and ask the program to 'in between' the other frames. The result is a stand alone animation that can be passed to friends or even sold.

Titler £149.95



Finally we have *Titler*. This is a video titling and sequencing package. The *Titler* program uses outline fonts enabling you to create text screens, credits etc. You can have any colour text, background, drop shadow, underline or rub out boxes. You can also include sprites and Draw files in your screen.

The *Titler* screens can be used in the *Sequencer* program along with screens from *Artisan, ProArtisan, Illusionist* and *Render Bender,* as well as lots of other formats. You can also include *Render Bender* or *Euclid* animations, *Tracker* tunes, *Armadeus* samples or Archimedes samples in your sequence. *Sequencer* gives you total control over the display of the screens and provides many effects to switch from one screen to the other. As well as being a tool for video titling this package can be used purely as a presentational tool for preparing and showing lecture notes, demonstrations etc. In fact all of Clares demos are now created using *Titler* and *Sequencer. Please request a demo disc that will illustrate the potential of these packages.*

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The alternative solution

Is the 512 the poor relation of the Acorn family? Jo Giles investigates

PRODUCT SPOTLIGHT

Product: CPFS and CPFS+
Price: £24.95 (CPFS+ inc. print buffer £29.95) both in Eprom
Product: 512 Fastboot
Price: £10.95 (disk) £14.95 (Eprom)
Supplier: Essential Software, PO Box 5, Groby, Leicester LE6 0ZB.
Requirements: Master 512, BBC B with 80186 second processor

THE marketing of Master and 512 machines has led to some confusion in terms over the years. Acorn called the 512 the Master 512 but it is worth remembering that the 512 co-processor can be fitted externally to a model B, B+ or internally in a Master. However, adding a 512 co-processor does not make your B or B+ into a Master.

Perhaps because of this confusion there has been little support for 512 users in the past seven years of its existence. On the other hand, this has led to a technically proficient user base.

Improving the boot

The 512 Fastboot program contains a rom image which claims to start your 512 from an 800k floppy disc in well under 15 seconds. With no commands and using no workspace, Fastboot is completely transparent so much so that you can load it and forget it whether or not you're using the 512 Tube.

It is indeed fast and I appreciated the fact that I didn't have to disable the rom as it worked quite happily with a whole range of software. Unless the Tube is on and you have just issued a hard break, Fastboot does absolutely nothing.

Essential offer the program on Eprom too, which is handy as Fastboot is there when you switch on the machine. If you have the disc version you can upgrade to the Eprom version for only £4.

That is really all there is to it, although you need to prepare a new Dos Plus boot disc – boot the 512 from your normal ADFS boot disc and format a new disc using the 800k 512 format. ➤

The Co-processor filing system

Available for the BBC Master 512 or BBC Model B/B+ as long as it has an 80186 second processor – also called a 512 co-processor – this system from Essential Software allows the memory to be used as a ram disc when operating in native mode. Essential are also now the sole suppliers of memory expansions for the 512.

The amount of file storage depends only on the memory size of the 512. Owing to the hardware's memory addressing methods and the 512's circuit design, the total memory on a 512 can only be 512k or 1024k.

CPFS self-configures to use all the available 512 ram except for a small fixed overhead of approximately 20k for the Tube transfer software and of course for the directory space needed to store file information.

You can then load and save files using the usual commands. The CPFS is quicker than a floppy or hard disk system with data transfer rates of up to 125k per second.

The CPFS+ comes with a printer buffer which is completely user defined – just use a star command – from 0 to 1000k in an expanded 512.

The default value is 128k in a standard 512 with 256k in an expanded machine – 256k being the equivalent of 10 screen dumps or 60 pages of text.

A point to note is that the remaining memory in either case can be used as a ram disc at the same time.

Essential Software have put some considerable time and thought into this filing system with both CPFS and printer buffer files being immune to hard and soft breaks.

However, all the data stored in any memory disc is lost as soon as a machine is turned off and when the second processor is used for its original purpose the same memory is used as CPFS uses for files, so any data stored in the memory disc will be corrupted if the Tube is turned on. It is impossible to do this by accident and CPFS warns you if files still exist.

CPFS operates slightly differently in a Model B or B+ from the way it operates in the Master but these differences are transparent.

> Unless the Tube is on and you have just issued a hard break, Fastboot does absolutely nothing

➤

Copy on to this DOSPLUS.SYS and COMMAND.COM before you put anything else on to it. This makes sure that you get the fastest start up possible.

Following the copying of the system files you should then add any batch and program files you might need. Putting the AUTOEXEC.BAT file on third followed by the programs and other files in the order they are most often used, speeds the boot.

Even on an 800k disc, the further down the directory list a file is placed the longer Dos Plus will take to find it.

Fastboot will still work if Dos Plus isn't the first file on the disc, but this will slow down the boot process depending where the files are physically on the disc.

You'll need to make sure too that Dos Plus is one of the first 96 file entries in the root directory or Fastboot will not find it. This is because the BBC Micro simply does not have enough ram to read the second half of the root directory.

With your new boot disc, you turn off the 512 and load the Fastboot image into the sideways ram or fit the Eprom if you have opted for one.

B and B+ owners must have have CPFS on a higher priority socket than Fastboot if they have both.

This allows CPFS to maintain proper control over the Tube configuration.

All you have to do now is use the new 800k boot disc in place of the old 649k one.

Screen interlacing has been turned off for B and B+ users which saves even more time as you can avoid entering *TV0,1.

More bits and pieces

Having got your system up and running in no time whatsoever, why not take a look at some of the utilities you can use to make your life even easier? Both Tull Computers and Essential Software have a range to interest you – a selection is listed below:

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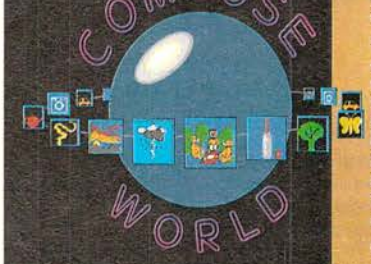
Music Programs For Acorn's Archimedes Range Of Computers

COMPOSE WORLD



In Compose World short phrases of music are represented as pictures or words and these musical building blocks can be used in any combination, and in any order, to compose a tune of up to eight parts.

Phrases can be created and edited in the built-in musical grid editor which features extensive facilities such as :- transpose, change volume, stretch, invert, reverse as well as the standard cut and paste facilities.
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Full support for Archimedes Sprite files, MIDI files and Maestro files provides easy links to other art and music programs.
Simple cartoons can be created by linking phrases to larger Sprites which are displayed while the sequence is being played.
The effect of chosing different sounds can be explored either through the Archimedes' own sound system or by using a MIDI keyboard.

Compose World: £48.00 + VAT (£56.40 inc VAT)

RHYTHM MAKER

Rhythm Maker provides exciting opportunities to explore create rhythm patterns. These rhythms are edited using a grid with full control over volume and stereo position. patterns can be different lengths using a variety of signatures and a wide range of grid resolutions.
The range of instruments used to create the rhythms car chosen from a large selection of Archimedes internal and sounds.
The rhythm patterns can be sequenced in any order combination to make a complete rhythm track.
This program is a powerful compositional tool and is desig encourage exploration of the effect of different rhyth variations.

Rhythm Maker: £34.00 + VAT (£39.95 inc VAT)

COMPOSE WORLD Files 1

Compose World Files 1 is a collection of twenty-eight extra files for use with Compose World. The disc contains files which cover a wide variety of different musical styles and structures as well as files which make use of the picture display facility of Compose World.
Some of the files also make use of the sounds provided with VoicePack1.

Compose World Files 1: £12.00 + VAT (£14.10 inc VAT)

VOICE PACK 1

VoicePack1 contains fifty-four sound modules for use with Archimedes music programs like Compose World and Rhythm Maker. An application called !ClickVox is provided with the disc which enables you to load or remove sounds from the sound system and save the settings to make it easy to configure the system for your own needs.

VoicePack1: £15.00 + VAT (£17.63 inc VAT)

FLEXI Synth

Flexisynth provides facilities to explore and create new so on an Archimedes.
Using analogue style synthesiser techniques sounds ca created from waveforms, volume envelopes and pitch envel with control over modulation, tremelo and vibrato. With the bank of waveforms provided and the extensive control facilit vast range of different sound timbres can be explored.

The program is designed to be easy to use with the opport to configure the screen and available options to make program accessible over a wide range of ages and abilitities. The sounds created can be saved as Archimedes s modules and used with any Archimedes music program.

Flexisynth: £34.00 + VAT (£39.95 inc VAT)

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PRODUCT SPOTLIGHT

Product: Prophet
Price: £170
Supplier: Apricote Studios, 2 Purls Bridge Farm, Manea, Cambridgeshire PE15 0ND.
Tel: 0354 78432

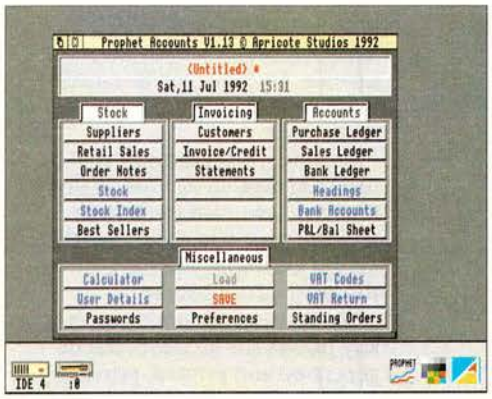
Profit with Prophet

Can business accounts be child's play? Don Turnbull investigates

AS one of the army of the self-employed I am well aware that my company accounts – like those of thousands of other well-intentioned traders – should be in much better order than they are.

Certainly removing the day-to-day disorder, end of month and end of financial year chaos from accounts activities could save a great deal of time and perhaps reduce accountancy fees.

Prophet is a multi-tasking business package from Apricote Studios which offers a relatively inexpensive way to set up a professional company accounts system. You decide just how comprehensive or simple a system your business demands.



● *The main menu of Prophet*

The package will run on any Archimedes with 2Mb of memory, but since installing the program eats up over 1Mb Apricote recommend a set-up that includes 4Mb of ram and a hard disk. This greatly improves the speed at which data is handled and leaves elbow room when !Fonts, printer drivers and so on are in use outputting invoices, statements, labels or reports.

Accounting for all

As with most general accounting systems, Prophet appears at first glance to be designed primarily for the retailer or manufacturer. Certainly the opening menu with its Retail Sales, Customers, Stock and Best Sellers headings seems biased towards a shopkeeping application, but this is not true in practice. Whatever product or service is being bought or sold, it can be handled by Prophet.

Its complete flexibility allows all or selected parts of the program to be implemented to suit the size and nature of the business. VAT registered companies, for example, will find that the way in which VAT and VAT returns are handled in Prophet makes a tiresome but essential chore very easy, while for non-registered companies this facility will be of no interest and need not be used. Similarly the Retail Sales option can be ignored if you don't handle sales where an invoice is not required.

The 130-page manual knocked on the head a long held belief that it is difficult to set up and run a fully-fledged accounts system.

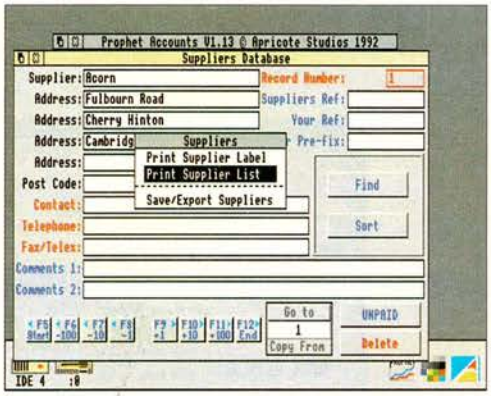
Any manual that says in its opening page: *The disk must NOT be write protected (make sure you can't see through the hole)* gets my full attention. Can you always remember whether that slider should be open or closed?

From this promising start the manual, which is laid out in a completely logical fashion, proved to be the most readable computer handbook I have ever tackled – and the first in many years that I have read from cover to cover.

Sensibly it focuses first on the mechanics of hardware and installation. It then deals with !Fonts, !System and Risc OS printer drivers to ensure that when you get down to some serious work you can stay with it.

Once setting up is complete and other general aspects of the way Prophet handles information are dealt with, a vital chapter for the layman – Accounting: an overview – introduces the reader to accountancy. In just four pages the term accounts is made clear, as are those of Sales Ledgers, Purchase Ledgers, Bank Ledgers, Expenditure and Income – useful for those new to the jargon.

All of the accounting and related activities are accessed through the well-designed Main Menu which is displayed on start-up. Under the four main headings: Stock, Invoicing, Accounts and Miscellaneous are a range of sub-headings. Those labelled Suppliers, Customers and Stock are record card-style databases.



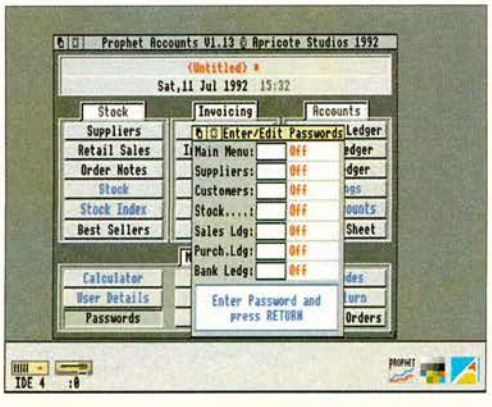
● *Setting up your Suppliers database*

Just a quick look at some of the main menu headings gives an indication of how usefully the different parts interact with one another other to provide a continuously up-dated view of a company's financial position.

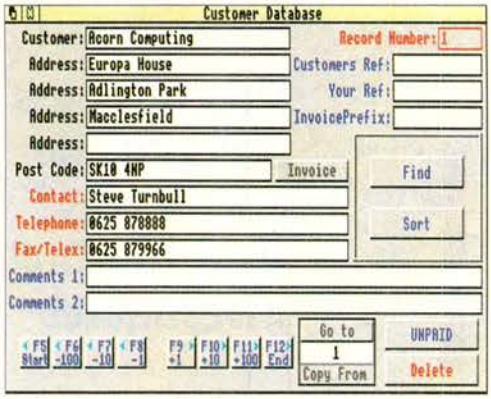
Dealers and donors

The Suppliers database contains the details of these companies and individuals, and interacts with the purchase ledger, purchase orders, stock database and stock index.

Labels and list printing and ➤

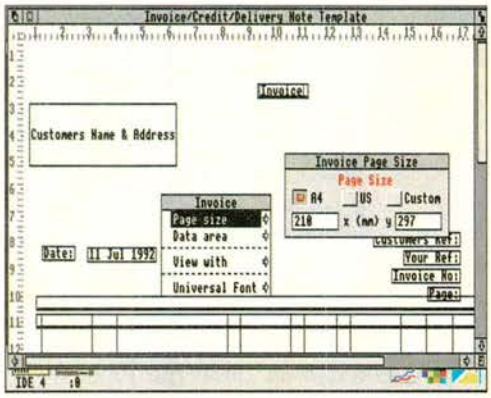


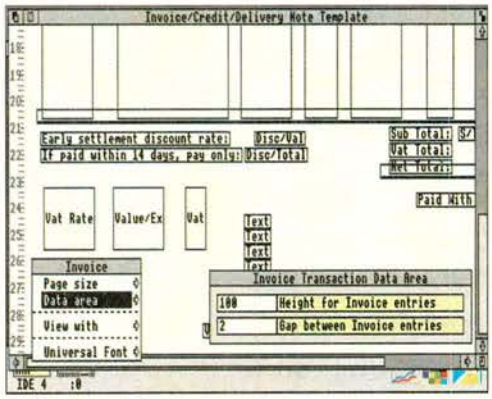
● *Sensitive information can be password protected*



● *The Customer database is quite straightforward and interacts easily*

● *You can customise your invoices simply*





● *The templates have all the basic information you will ever need*

● *The Preferences menu gives you even more options*

Preferences
Prophet Accou
Sat,
Stock
Suppliers
Retail Sales
Order Notes
Stock
Stock Index
Best Sellers
Calculator
User Details
Passwords
Maximum number of Suppliers: 10
Maximum number of Customers: 10
Maximum number of Stock Items: 12
Maximum number of Sales Entries: 5 x 10
Maximum number of Purchase Entries: 5 x 10
Maximum number of Bank Entries: 5 x 10
Autosave every: 0 minutes With Warning
ESD: VAT Discounted Yes: No:
Save sales to Sales Ledger: With Warning
Default Sales Ledger Accnt: L Heading: BA
Save complete file on exit: With Warning
Paper feed....Single sheet: Continuous:
Maximum numbers will not be adjusted until the program is next run. See the chapter 'MEMORY' in the manual for details.
IDE 4 :0

➤ exporting data can be carried out from here and an Unpaid button gives an instant readout of outstanding current and aged invoices – useful when staging payments.

With many of the same features, the Customer database interacts with the sales ledger and invoicing. The Unpaid button reappears and reveals current and previous unpaid invoices. If you use the Importer package from Computer Concepts combined with Impression, mail shots can be produced from both these databases too.

Getting cash flow under control

A preferences window can be opened from the main menu which allows you to set the number of suppliers, customers and stock items. You can also add an estimated number of sales, purchase and bank entries.

Keeping these numbers low saves memory and speeds up Prophet's handling of the information, but they can be changed at any time, giving flexibility in use as needs change. The Autosave option – essential in accounts work – is also set here.

Paid and unpaid invoices to and from customers and suppliers, receipts, bank statements, purchase orders, loans, payments, stock and the like represent the lifeblood – the cash flow – in and out of a company.

Once entered in the multi-tasking environment under appropriate headings, these apparently disparate elements are linked interactively and can be accessed to provide a complete picture of the company's financial position.

The sales and purchase ledger and bank account headings are set up directly from the main menu. They can be simple or complex as the business demands. Entries can be made directly into the ledgers or entered automatically when there are sales or purchase transactions.

Reports can be generated on the contents of the Purchase, Sales and Bank ledgers to enable any aspect of the accounts, over any time period, to be examined. Similarly, VAT inputs and outputs and VAT payable can be called up at the touch of a button, as can Stock Valuation for all or selected items.

Add to this the facility to generate Profit and Loss, Balance Sheet and Final Accounts, plus the useful Transfer utiltity and this is a very well-rounded package.

Printing in style

Templates come with Prophet which let you customise orders, invoices, credit notes and statements. Once set up they are generated automatically as needed and can be amended at any time.

Since Risc OS printer drivers are graphic-based any typeface, logo or other illustration may be used to construct a template. The company name and address can be set in any style, and other elements such as customer name and address, date, references, and so on can be positioned virtually anywhere. The current date, references and customer name and address are entered by the program as invoices and the like are prepared.

Interestingly, when asked to enter 10 of item X on an invoice with only 5 recorded in the stock database, only 5 will show on the invoice. An order will be raised automatically by Prophet to restore stock levels.

Similarly, if an attempt is made to issue a statement against an invoice that has been paid the system will trap the error and abort the action – always assuming you have entered the payment elsewhere.

As mentioned earlier, reports on any part of the accounts can be generated and printed, providing a useful guide to future actions. In any case regular hard copy printouts of an active accounts system is a must, if only for your accountant's peace of mind.

Any 32-bit owners running or planning a business would find Prophet worth looking at. It might also prove useful to opted-out schools, now completely in charge of their budgets for the first time. Similarly, for schools and colleges running business studies classes for students, it could be a good way to get to grips with today's most important business discipline – controlling the cash flow.

Summing up

For good graphical presentation, ease of use and access and an excellent manual, give Prophet full marks. The price is quite acceptable for a program that does what it set out to do in a very professional manner.

To give potential users a *hands on* feel for the program Apricote offer a truncated version – minus the print and save options – for £10 which is refundable when the complete package is purchased.

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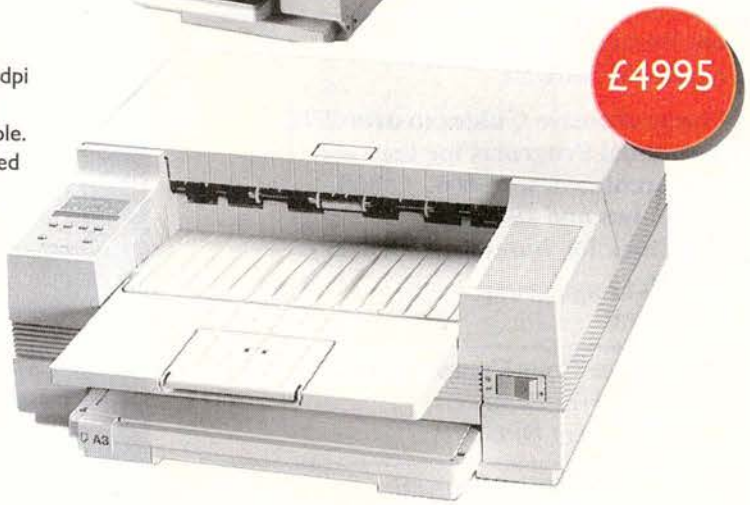

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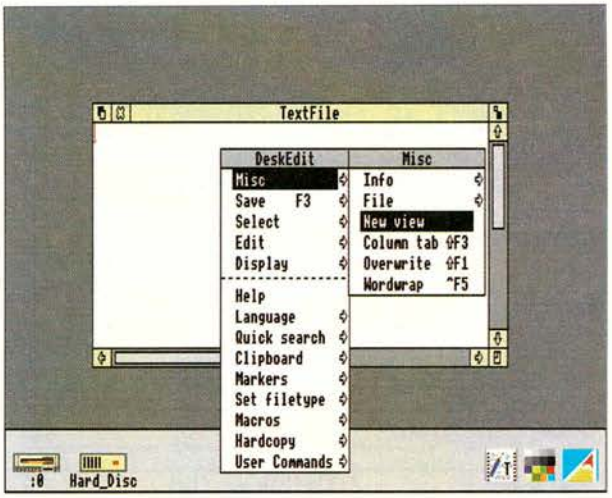
THE BIG BLACK CAT ALOGUE

Back to basics

John Allen takes a look at the advantages of a new text editor



● *DeskEdit features are shown under the dotted line*

PRODUCT SPOTLIGHT

Product: DeskEdit
Price: £24.95
Supplier: Risc Developments, 117 Hatfield Road, St Albans, Herts AL1 4JS.
Tel: 0727 40303
Requirements: Risc OS

DESKEDIT must be one of the most useful applications available for serious users of Risc OS computers. But the immediate question is: Why would anyone need another text editor when Edit is already supplied with the machine?

The answer is that DeskEdit is based on Edit and, with the exception of the Task Window, all its features are included and used in exactly the same way. But there are many significant extensions.

DeskEdit itself has already been upgraded with many extra facilities not present in the original release. New features are shown on the main menu below the dotted line, although some existing features have been expanded, most particularly searching.

Edit has *magic characters* as wildcards and DeskEdit takes the principle further by allowing *power searches* with a vast array of possible characters.

To give two examples, a search string of dis[ck] will find occurrences of disc and disk. For a more complicated example consider a search string of:

```
* *:* REM*~$$
```

This means *zero or more spaces, followed by zero or more colons, zero or more spaces, followed by REM, zero or more characters that are not newline characters, followed by a newline.*

Globally replace this with $ and you've removed all the REM statements from a Basic program. Incredibly powerful but requiring great care in use.

DeskEdit can set files to a wide variety of filetypes and more can easily be added to its menu – up to a maximum of 30. Beside the obvious usefulness when files are first created, this feature can also be used to change the filetype of a file created by one application so that it can be used by another.

One example is the data file for 1st Mail. This has to be of text type, but the data is actually in CSV format, so a CSV file – such as might be produced by a spreadsheet or database – has to be changed to a text filetype to make it acceptable to 1st Mail.

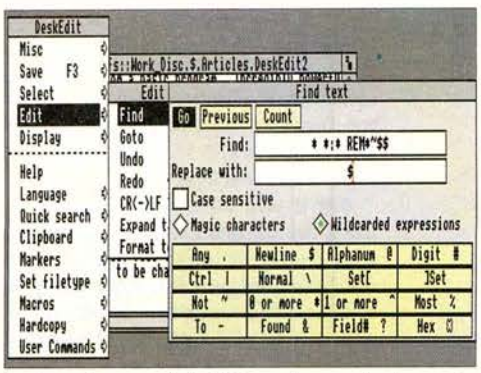
The program provides three modes of operation depending on the type of file being edited: Text, Basic and C language.

Text mode

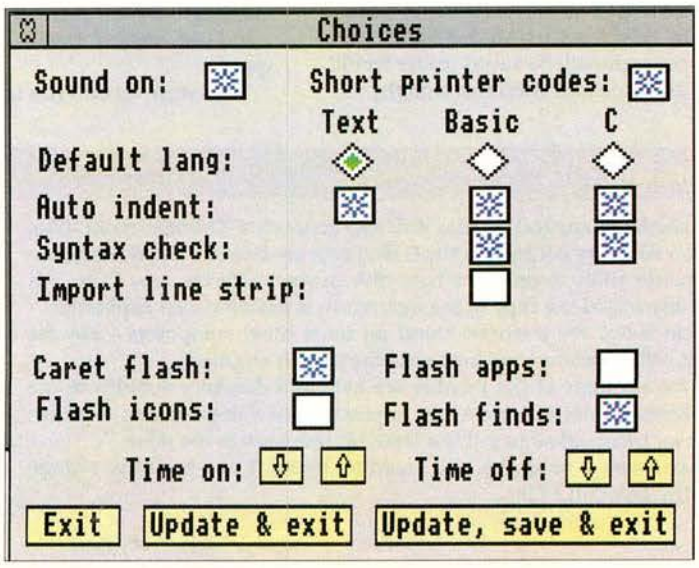
This is very like an expanded Edit. A text editor is not the same thing as a wordprocessor but DeskEdit has just about enough facilities for it to be used for simple word processing.

It is possible to set wordwrapping and margins, plus effects such as bold characters, underlining, italics and page breaks – but the characters representing these effects will be counted in when wordwrapping. The effects can be printed with Risc OS printer drivers from version 2.40 onwards.

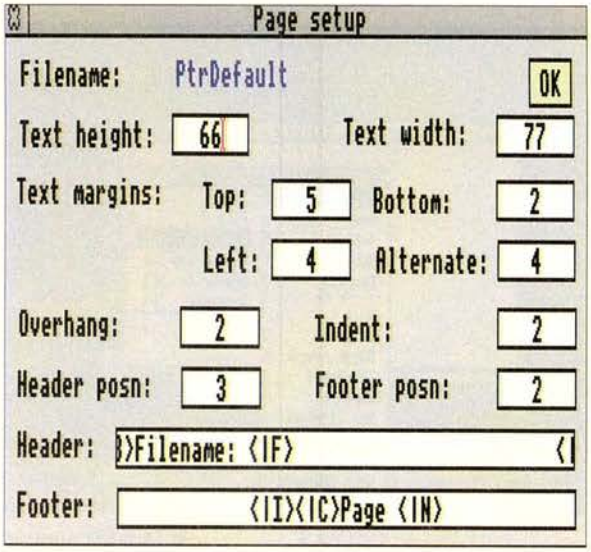
Although DeskEdit can use any one of the Risc OS fonts for display, it will only print in the system font. Fortunately DeskEdit – unlike early ➤



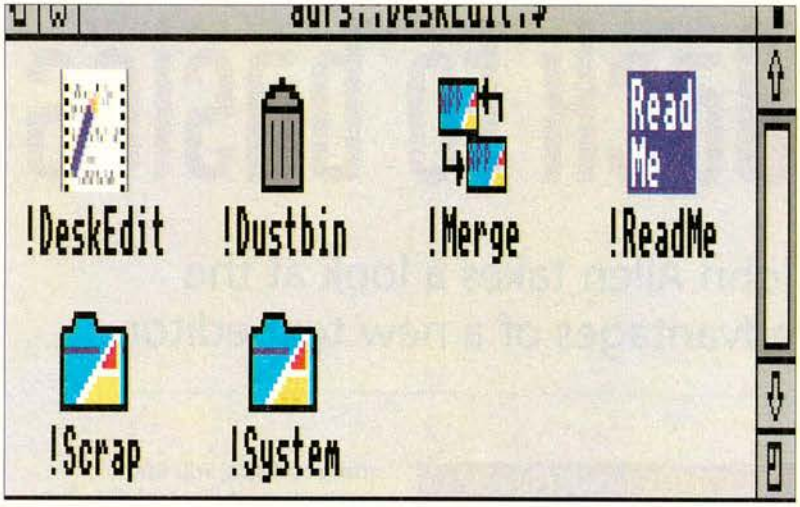
● *Complex search facilities using magic characters*



● *Customise the program using the Choices menu*



● *More customisation options in the SetUp menu*



● *The disk contains a host of other programs*

➤

versions of Edit – can cope with large numbers of fonts installed when it is run.

Basic mode

I found DeskEdit particularly useful for editing Basic programs. Drop a Basic file icon on to the DeskEdit icon and the file is loaded in a text form, that is just as it would normally be displayed in Basic command mode, rather than the jumbled mess in Edit on Risc OS 2.

Properly structured programs without GOTOs can have line numbers removed, and the editor will check whether brackets and quotation marks are balanced, as a program is written. Control key commands will move between DEFs, PROCs, FNs and REMs.

The file can be saved as tokenised Basic by pressing F3 and lines numbers will be added where necessary. One of the most useful additions in the latest version is that by pressing Ctrl+Shift+F3 the program will be saved under its old filename and then run straight away. If the file is called !RunImage, DeskEdit will assume that it is part of an application and run the parent application.

This is a much faster way of developing programs than in the traditional BBC 8-bit micro command line way, supplied as standard on Risc OS 2 machines. This can involve a lot of switching back and forth between command line operation and the Desktop.

DeskEdit is almost as cheap as buying the Basic manual to find out how Acorn's BasicEdit works. However the version of Edit that comes with Risc OS 3 loads and saves Basic in just the same way although it won't auto-run.

C language

The ability to edit C source code programs is less important, since the Acorn C contains an editor, but DeskEdit does perform a simple syntax check and can supply auto-indents to make blocks of code stand out without taking up extra space.

The latest version has had a quick function definition search added and an easy function to comment out whole lines of code.

Unfortunately it doesn't respond to the *throwback* messages available in the !SrcEdit program that comes with C. Throwback automatically finds the line that has generated an error, even if you've altered the number of lines in the source file.

Size and customisation

DeskEdit takes up 320k of memory on my 4Mb A3000, rather more than the 160k used by Edit. So on smaller machines it takes up a significant amount of ram.

The editor can be customised by changing options in the Choices and Page setup items in the DeskEdit icon menu. These can be saved to make them permanent. Also the DeskEdit$Options variable in the !Run file can be edited to change things such as default fonts, colours and line spacing.

The file Commands can be edited to put extra commands in the User Commands menu and FtypeTable contains the list of filetypes.

What's on the disk

Besides the !DeskEdit application, the disk also contains a !Dustbin application, a new !System directory containing the C language runtime library, documentation and a merge utility to update a hard disk !System with the new CLib. This new version also includes a copy of the new Acorn standard !Scrap application.

The Dustbin is like the trashcan found on some other computers – any file dragged to it will be deleted and held until the trash is emptied.

In reality the contents of the Dustbin are held in a directory Rubbish of the Dustbin application, which makes its use impractical on a single floppy machine, as you'll forever being asked to put the DeskEdit disk back in the drive.

It works well with a hard disk and could be useful if you regularly change your mind after deleting a file.

Summing up

If you only use your computer to run standard applications Edit is likely to satisfy your requirements for an editor. DeskEdit really comes into its own when you want to customise and explore the machine.

But if you write Basic programs using the standard software you'll find that DeskEdit makes development much simpler and less frustrating. In addition the comprehensive way in which it can be customised makes it suitable for a wide range of more advanced users.

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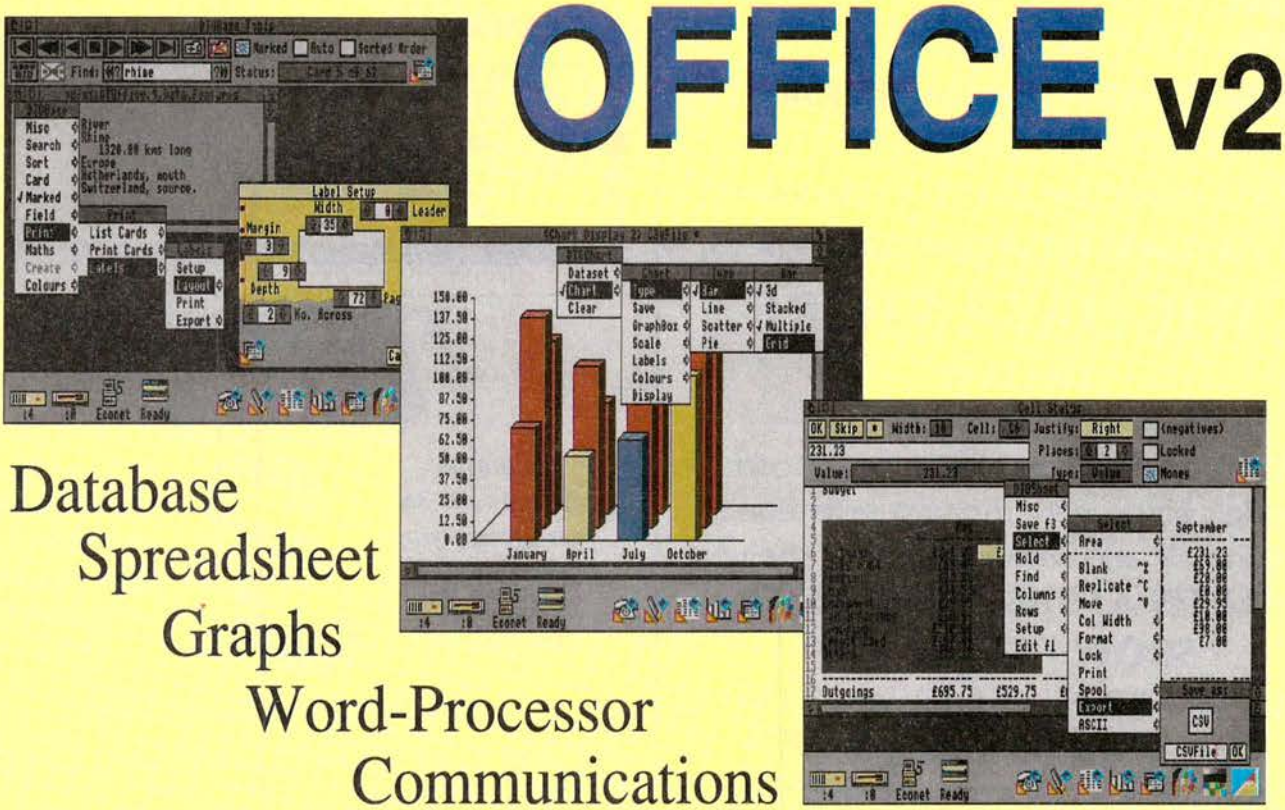

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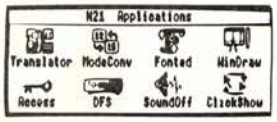

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American Pie

Teri Paul delves into the mine of PD available

WITH a number of British Archimedes programmers now working in the states for companies such as Microsoft, it was only a matter of time before some PD software came the other way across the pond.

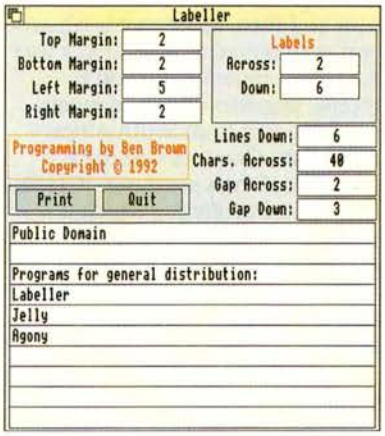
Michigan-based Ben Brown sent me a selection of Archimedes PD this month. **Gearbox** is a simple graph program which calculates and plots MPH against RPM. Creating labels is made easy with **Labeller**, while for the more artistic there's **Rembrandt** – a 256 colour art package. For music bods there's **ST JukeBox** – a Risc OS Sound tracker player.

The labelling program is very straightforward, giving you the ability to specify the top, bottom, left and right margins as well as up to 10 lines of text. Once you have decided on the wording you can specify the numbers of lines, characters, leading and line spacing as well as the number of labels.

Rembrandt reminds me very much of Degas on the Atari ST, and the interface is very similar. Non-multitasking, it's still a nice package and has some very powerful features built in. In particular I liked the flip options which give some very good effects.

You can save your creations as sprites so they can be incorporated into other applications or as Rembrandt files. Although the program is a little idiosyncratic, I found it quite easy to work with. Text can be added and sized quickly and the range of drawing tools is very comprehensive.

● *Art by any other name*



● *Putting a name to it*

Showing off

Though I am very impressed by starfields, bouncing balls and parallax scrolling, I do like demos to have something a little more unusual or special. ARMistic recently sent me a copy of Agony which is a rather elegant demo featuring sampled piano music and some lovely graphics.

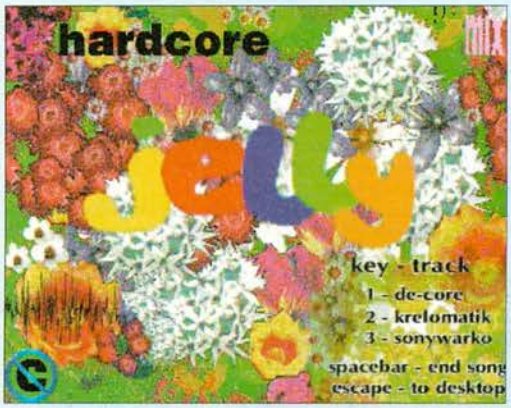
Sound and pictures come from Art and Magic who do work for Psygnosis with coding by Ace/ArcAngels. The pictures will cycle through on their own or you can speed things up with the spacebar.

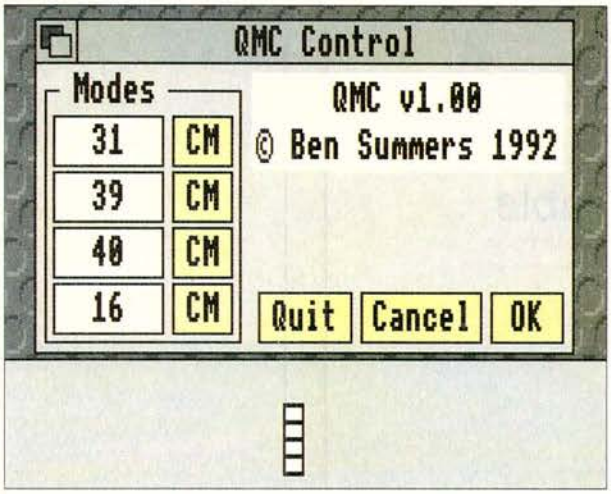
The illustrations are full of atmosphere and depth – usually missing in computer-generated art – and the picture of a tree with the light shining through it is truly superb.

The other pictures show a definite bent to the fantastical, with burning trees against angry skies and airborne beasts around spectacular waterfalls.

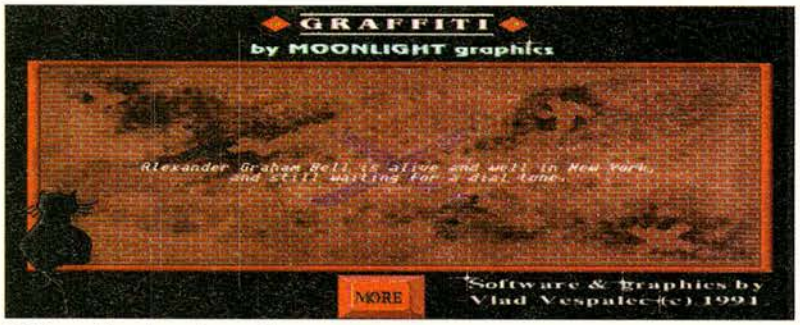
In total contrast and for more chaotic moments load up Jelly. Written by Hex – the authors of Top Banana – some of the imagery is similar to that game and the graphics and music have all been created using chaos theory.

There are three PD mixes to choose from: De-core, Krelomatik and Sonywarko. Superb graphics and hardcore sound benefit greatly from a hi-fi and a big screen.





● *Simple icon – powerful utility* ➤


GRAFFITI
by MOONLIGHT graphics
Alexander Graham Bell is alive and well in New York,
and still waiting for a dial tone.
MORE
Software & Graphics by
Vlad Vespalec (c) 1991

● *The writing is on the wall*

● *Playing for keeps*

Share and share alike

Though officially a PD column, I do like to include a bit of shareware now and then. Shareware is when you are required to register as a user for a mere pittance and you'll receive upgrades and/or manuals.

All the way from South Africa, Moonlight Graphics sent me a selection of their programs. **!Graffiti** is an amusing offering which is really just a selection of sayings, quotes, limericks and jokes such as: *UFOs are for real: the Air Force doesn't exist* and *Progress is only made on alternate Fridays*.

!ESP was another unusual program which caught my eye. You are given the option of turning your family into frogs – not a bad fate for some of them.

However, this is the punishment not the goal, as you have to guess which shape is to appear next. Get too many wrong and you'll have to find another lily pad.

Have you heard of the card game, **Staks**? I must admit that it was a new one to me, but the computer version is quite addictive – once I worked out what I was supposed to be doing.

The idea is to collect three stacks of four cards of the same suit and there is a nobble factor built in so just as you think you're winning your stack disappears. It was conceived by Rod Duarte, to be played as a family card game, computer game and a casino game.

The computer plays the family card version and was written by Vlad Vespalec. It's mouse-controlled and you can decide the dealing order and quality of your opposition. Interesting, though I did have problems with it on Risc OS 3.

Modify the mode

Ben Summers is a name that's always on the tip of the tongue when talking about PD. I'd never be without his FileUtils, even on Risc OS 3. Now he's popped up with another little gem.

It's called **QMC**, which stands for Quick Mode Change and its purpose is very clear: Changing screen mode is a pain, click Menu on the palette icon, slide up and across then – if you're lucky – click on the mode you want. If you're unlucky you want a non-standard mode so have to type it in.

With QMC you just initialise your four favourite modes – the numbers are held in CMOS so you don't lose them – and the icon is just four boxes. You click the box that corresponds to the mode you want. It's quick and easy.

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GLM PD, 2 Pierrefondes Avenue, Farnborough, Hampshire GU14 8NF.
HeadFirst PD, 97 Chester Road, Southport PR9 7HH.
JD Public Domain, 7 Klembergerweg, 7214 BK Epse, Holland.
JJF PD, 49 Hollberry Close, Wingates Green, Redditch, Worcester B98 0QT.
Robert Pike, 4 Mayfield Road, Girton Cambridge CB3 0PH.
Mad Rabbit PD, 174 Duke Street, Southport, Merseyside PR8 5EL.
MasterDisc, 2 Seaview, Hoylake L47 2DD.
Re-Run, 1 Northholme Close, Grays, Essex RM16 2NX.
ScreenTeach, 21 Highlands Road, Rochdale, Lancashire.
The Wizard - BBC, Ryburn, Thorpe Lane, Cawood, Selby, North Yorkshire YO8 0SQ.

32-bit houses

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ARMistic, 136 Wellesley Road, Ilford, Essex IG1 4LJ.
Busy Bee Computers, PO Box 25, Ormskirk, Lancashire L39 3QR.
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Cream PD, 38 Baunton, Cirencester, Gloscester GL7 7BB.
Datafile PD, 22 Duxford Drive, Aldergrove, County Antrim, Northern Ireland BT29 4BG.
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Naked PD, Fayence, Fulford Road, Fulford, Stoke-on-Trent ST11 9QT.
Ozone-Friendly PD, 180 Cumnor Hill, Oxford OX2 9PJ.
Power to the Programmers, 1st Floor, 23 Cooper Street, Nelson, Lancashire BB9 7XW.
Moonlight Graphs – Shareware, PO Box 3569, Cape Town 8000, South Africa.
Risc PD, Potteries House, Rannoch School, By Pitlochry, Perthshire PH17 2QQ.
RML PD, 24 Penryn Close, Norwich NR4 7LY.
Skyfall, PO Box 2220, Birmingham B43 5R2.
Soft Rock Software, 124 Marissal Road, Henbury, Bristol BS10 7NP.
Spidersoft PD, 218 Saville Park Road, Halifax, West Yorkshire HX1 2XS.
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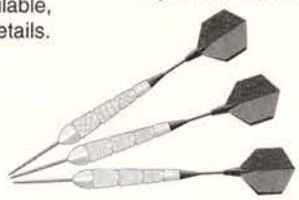

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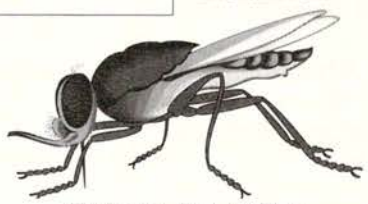

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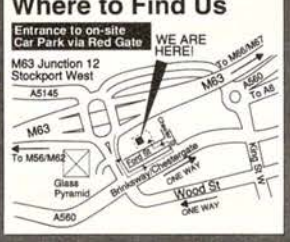

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Aggressor (Atomic)	£18
Air Supremacy (Superior)	£17
Bambuzle (Arxe)	£19
Black Angel (4D)	**£26**
Blaston (Eterna)	£15
Blitz (Arxe)	£17
Blowpipe (Serial Port)	£15

Games Software (Contd)

Boogie Buggy (4D)	£20
Break 147 & Superpool (4D)	£26
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Bug Hunter in Space (Minerva)	£13
Cataclysm (4D)	£20
Chess 3D (Micro Power)	£14
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Watford Electronics

(A member of the Jessa group of Companies – Established 1972)

Mail Order & Showroom: Jessa House, Finway, off Dallow Road, Luton, LU1 1TR, England

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Shop Hours: 9am to 6pm (Mon.-Sat.) Thursday 9am to 8pm. FREE customer car park.

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The choice of Experience

Archimedes micro

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A3000	£525	£685	£850
A3000L/C	£642	£799	£967
A3010-1Mb Family	£424	£584	£749
A3010-2Mb L/C	–	£680	–
A3020-2Mb FD	–	£749	£799
A3020-2Mb HD60	–	£899	£949
A4000-2Mb HD80	–	£949	£999
A4000-Home Office	–	£999	£1049
A5000-2Mb HD80	–	£–	£1399
A5000-L/C	–	£1445	£1745
A5000-4Mb HD120	–	–	£1599
A5000-2Mb ES	–	£1299	–
A5000-2Mb NS	–	£1399	–
Pocket Book	£212	–	–
Pocket Book Class	£2127	–	–

Acorn Inkjet Printer add £199

Archi A4 Notebooks

A4 Notebook with 2Mb RAM	£1399
A4 Notebook 4M RAM/60M HD	£1699

FREE OFFER

When you purchase an Archimedes Micro from Watford, we will give you 10% worth of Hardware or Software of your choice at no extra cost to you.

Archi Accessories

• 3.5" 800K 2nd Floppy Drive (305/310)	£118
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A3000 Accessories

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• A3000 User/Analogue/IIC I/O Card			£42
• A3000 External Podule Case			£15

A5000 Hard Disc Drives

A5000 – 100Mb 18mS Hard Disc Upgrade	£269
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Archimedes Hard Disc

Watford's ST506 Hard disc drives for A310 & A410 series fit internally into the space provided.
P.S. A310 upgrades require a backplane and a fan.

• **3HDP** – Hard Disc Podule only	£99
• **3HD20** – 20Meg H' Disc + Podule for 310	£195
• **3HD40** – 40Meg H' Disc + Podule for 310	£285
• **3HD50** – 53Meg H' Disc + Podule for 310	£359
• **4HD20** – 20Meg Hard Disc for 410	£69
• **4HD40** – 40Meg Hard Disc for 410	£195
• **4HD50** – 53Meg Hard Disc for 410	£260
• A3000 20Meg Hard Disc + Podule	£279
• A3000 40Meg Hard Disc + Podule	£379

Archimedes A3000 Desk Top Publishing (DTP) Sale Offer

A3000 BBC Archimedes Micro with 3.5" Floppy Disc Drive and a mouse, upgraded to 2Mb RAM, COLOUR Monitor + Lead, 20Mb fast IDE Hard Disc Drive, 'Compression' Utility to increase the Hard Drive capacity to Typically 40Mb, The highly acclaimed Computer Concept's Impression Junior DTP software package.

RRP: £1299

Sale Offer Price: £875

Above Package plus Acorn's Learning Curve **£918**

NEW DTP Package as above but with a 30Mb fast IDE Drive, (with Compression utility, the capacity is increased to typically 60Mb) **£899**

Above package with Acorn's Learning Curve **£942**

Special Education discounts available on above package, micros, RAM upgrades, ARM 3 Turbo Card, etc. Please write in or telephone:

(0923) 237774/250335

Lease Purchase facility now available. Please telephone or write in for details.

Archimedes RAM Upgrade

All our memory upgrades are simple to fit. No soldering required. Fitting instructions supplied.

• **R300**-4 Layer RAM upgrade board (Bare).	£25
• **R302**-A3000 – to 2MB RAM Upgrade	£36
• **R303**-A3000 – to 2MB RAM Upgrade (expandable to 4MB)	£55
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• **R312**-A305/310 – to 2MB RAM Upgrade	£99
• **R314**-A305/310 – to 4MB RAM Upgrade	£199
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• **A5000** – to 2MB additional RAM Upgrade	£85

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Acorn's Archi DTP Package	£69
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Impression Business Supplement	£39
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GammaPlot	£39	Sigmaplot	£39
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More Archimedes Products See Pages 3, 4, 5, 6, 7, 8

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Hi-Speed, Low Cost Archi Hard Disc Drive

Watford's advanced interface allows IDE drives to work on any Archimedes machine, speeds in excess of SCSI devices can be obtained at a fraction of the cost of a SCSI drive.
Up to four drives are supported by the IDE filing system IDEFS, up to two drives can be attached to each expansion card, up to four cards can be installed in a machine. An optional 20Mb or 40Mb hard disc can be supplied on the podule expansion card itself, with its fast transfer rate and power saving modes the drive is ideal for storing commonly used software such as the !Fonts application.
A powerful security feature has been provided with the two unique commands *IDELock and *IDEUnlock, ideal for educational establishments where hacking or tempering may be prevalent that may lead to loss of data. Once locked, the configuration can not be changed until a secret password is used. The !IDEForm Write Protect option is particularly useful in conjunction with *IDELock as it will prevent any unauthorised deletion of data.
By an innovative use of on-board memory, the card will remember its configuration, even if moved to another slot or even a different machine, this also includes the unique security features.

Hardware

- Single width EuroCard
- Supports proposed ANSI ATA (IDE) specification
- Fast 16 bit MEMC interface interrupt driven to support background disc operations
- 5 Mbytes per second peak transfer rate
- Built in Non Volatile RAM to hold configuration
- LED activity indicator
- 37 way D type socket for external drives
- Optional on-card 20Mb or 40Mb hard disc
- Up to two drives (master and slave) per card
- Multiple cards per machine (up to four)

Software

- Conforms fully to the Acorn IDE Specification
- All software supplied in ROM
- Filing system 'IDEFS'
- Desktop filer with drive ready detection and disc name under icon
- !IDEForm, WIMP based configuration and formatting software
- Drives can be individually write protected
- Up to four drives over multiple cards
- Power saving standby modes supported with configurable timeout
- Drives can be used without translation in native mode for minimum overhead
- !IDEFSDisk, creates PC emulator hard discs

Prices

Part No.	Capacity	Access Speed	Price
ADA 0520	44Mb	28mS	**£215**
ADA 0530	100Mb	16mS	**£295**
ADA 0570	200Mb	15mS	**£479**
ADA 0580	330Mb	15mS	**£849**

All the above 3.5" hard drives are supplied complete with Controller Card, cable & Software on ROM. (Internal fitting). For use with A300/A400/A500 series machines.

For A3000 users an additional external Case and PSU will be required.

AAA 0300 External Case & PSU for A3000 **£85**

Internal Hard Disc Drives for A3000

State of the art, 4 layer internal IDE Hard Cards for the A3000. Software supplied in, On-board ROM.

ADA 0700	21Mb	23mS	**£185**
ADA 0770	30Mb	19mS	**£285**
ADA 0720	44Mb	19mS	**£349**
ADA 0750	60MB	18MS	**£399**
ADA 0730	89Mb	18mS	**£619**

Supplied ready assembled. No soldering required. Simply plug into the allotted space.

Archi IDE Hard Cards

"Simply plug and play"

Watford's easy to instal, low cost, high performance, revolutionary IDE Hard Cards for the A300 & A400 series Archimedes.

ADA 0650	21Mb	23mS	**£199**
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ADA 0660	44Mb	28mS	**£359**
ADA 0810	60Mb	18mS	**£409**
ADA 0670	89Mb	18mS	**£629**

(Can be used as a Removable Hard Drive)

NEW

Archimedes A300/A400 SCSI Hard Disc Offer

(while stocks last)

100MB Hard Disc Upgrade complete with Controller card, Cables, Formatter and Manuals

RRP: £799

Offer Price: £325

Syquest Removable Disc Units

These Hard Drive units are supplied complete with a cartridge 42Mb removable, cables and a high flow fan for cooling.

- Syquest Drive Unit pack **£399**
- As above + SCSI Card **£415**
- Spare 42Mb Disc **£55**

Archi to BBC Serial Link Mk 2

Using this simple data link, it is possible to solve all your BBC to Archimedes data transfer problems. The kit is supplied with a disk, and the necessary cable to connect the two computers.
New RISC OS Version also available (please specify)

- For A3000 **£15**
- For A5000 **£16**

For A3000 Serial Upgrade **(£19)** required

A3000 I/O Card (User, Analogue & IIC)

This NEW versatile I/O Card from Watford, fits inside the A3000 and includes an Analog to Digital Converter, a User Port, and an InterIC (IIC) connector.

The card allows many of the peripherals developed for the BBC to be used with the Archimedes A3000. The ADC and User Port have the same pin out and connectors as the BBC computers.

Extensive RISC OS software is supplied to provide BBC OSBYTE calls for support of the ADC and User Ports, including the BASIC keyword ADVAL. The software provides extended RISC OS support for separate interrupts from both the ADC and User Ports, permitting easy interrupt driven operation.

The card is provided with all the software in ROM and is automatically loaded when the machine is turned on.

Peripherals connected to the ports can obtain up to 500mA of power at +5V. A fuse is fitted to the card to protect the A3000 from damage arising from accidental short circuit of the power output.

Features

- An 8 bit User Port with a standard 20 way IDC connector, compatible with the User Port on the BBC computers and the Archimedes I/O Podule.
- A 10 bit Analog to Digital Converter with a standard 15 way D type connector, compatible with the ADC on the BBC range of computers and the Archimedes I/O podule.
- An InterIC (IIC) Port with a 5 pin DIN socket to connect the A3000 to external IIC devices. **£42**

Minerva's Archimedes Software

EasyWord	**£18**	Time Tabler	**£549**
Home Accounts	**£35**	System Delta	**£59**
System Delta Program Reference Manual			**£29**

Stand alone Business Accounts Packages
Sales; Purchase; Order Processing and Invoicing; Nominal; Stock management
£79 per module
or Complete Business Package **£325**

ARM 3 Turbo Card MkII

Simply The Best

Here it is at last – the all new Mark 2 version of Watford's highly acclaimed ARM 3 processor board for the Archimedes and now also the A3000 series computers. Using the latest surface mount technology on a high quality four layer circuit board we have reduced the overall size to a mere 53mm x 45mm, and the cost to only £169. Mk II upgrade will increase the speed of your micro by a factor of 3 to 6.
Any competent A300 or A400/1 series micro owner can fit the upgrade himself, as we provide full fitting instructions and a special ARM chip extraction tool. However for A3000 micros and those not wishing to perform the upgrade themselves, we will collect, upgrade and return your micro by courier service, at an additional cost of £18.
(A300 and old A440 series owners please note – you will need to upgrade to MEMC1A for ARM3 to work.)

RRP £249

Offer Price £169

Acorn have satisfactorily evaluated Watford's ARM 3 upgrade and the A3000 upgrades are fitted by Acorn approved surface mount technology centre, therefore its fitment will not invalidate Acorn's warranty on the micro.

BBC MASTER

MASTER 128K Micro incl. Acorn's View, Viewsheet, ADFS, BASIC Editor & TERMINAL plus FREE OFFER (see below) **£399**

FREE with every BBC Master purchased from us during August

A 5.25" Double Sided, 40/80 track switchable 400K Disc Drive complete with cables and a Utilities disc incl. 2 games, plus

Gemini's OFFICE MATE & OFFICE MASTER

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Archimedes World – July 1992

"Other Arch image grabbers have been irritating or just plain useless..."
"Loads of well written, easy-to-follow and in-depth help, all glued together in a very handsomely designed manual."
Computer Shopper – July 1992

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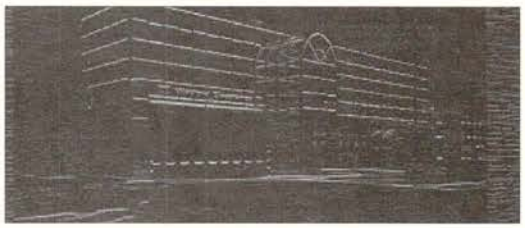

Original after edge filter applied

Original after applying an enhancement filter

Original after applying a smoothing filter

The only sensible scanning and image processing solution for the Acorn Archimedes. Just compare the features, there can only be one choice...

Watford proudly introduces its innovative new 256 grey-level hand scanner, **Scan256,** for the Archimedes range of micro computers. It offers up to 256 grey levels at a maximum of 400 dpi, and comes complete with the most advanced and sophisticated 256 grey scale scanner software currently available for the Archimedes.

Features

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  Allows multiple consecutive operations without having to save the original image to disk.
- **Instant re-draw of all 4 image buffers**
  No re-calculations needed unlike other packages that use on the fly screen-dithering.
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  Available via industry standard ChangeFSI package for maximum image quality. An invaluable aid to reduce the size of the image whilst maintaining maximum image quality.
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  Convolution digital filtering fully implemented with over 100 filters covering edge detection, image enhancement and image smoothing. Enables high quality images to be obtained from poor quality scans.
- **A unique L.E.D. indicator on the scanner**
  Shows you when the scanner is being moved at close to the maximum scanning speed, not just when it is too late and a scan line has been missed by moving the scanner too fast.
- **Fully adjustable scale and size of image preview when scanning**
  Image preview window can even be behind other windows and preview is shown in real-time with maximum number of grey scales available.
- **Support for 'The Serial Port' Graphics Enhancer**
  Allows up to 256 simultaneous grey scales on screen at once.
- **True brightness, contrast and gamma correction**
  All can be specified by a value to exactly match monitor/printer. No guessing with shapes of curves and correction is mathematically correct.
- **RISC OS 3 features**
  Include rotation and shearing. Scans normally are scanned at a slant rather than being rotated, shearing enables the scan to be corrected better than rotation.
- **Fast RISC OS printing**
  Multiple options such as scale to page, centre, sideways, selected area, and any scale.
- **Scanner scans at an amazing 3ms per line**
  A post card at 400dpi takes only 7.3 seconds to scan, creating over 3Mb of data.
- **Selectable scanning modes**
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- **Save image in foreign formats**
  Save as industry standard TIFF for exporting to other systems, AIM for further processing, or RISC OS Sprite format.
- **Single width, high quality podule using surface mount technology**

Scan256 Scanner, Interface Card, Software and Manual

Only £185

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- More German Games – Aimed at pupils in their 2nd year of learning German. 12 years+ **£22**
- Computer Control – This is a package of 3 programs simulating control of a greenhouse, a robotic arm & a chemical plant. 14-16 years **£26**
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Archi Educational Software

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- DigiSim **£35**
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- Gate Array Teaching System **£68**
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Archimedes Software

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Snippet	£21
Titler	£119
Tween	£29

GAMES

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Boogie Buggy	£14
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Bughunter in Space	£19
Cataclysm	£19
Chess 3D	£16
Chocks Away Compendium	£32
Chocks Away Extra	£14
Conqueror	£15
Corruption	£18
Cyber Chess	£38
Elite	£33
Enter the Realm	£19
E-Type Compendium	£20
E-Type Designer	£13
Family Favourites	£13
Grievous Bodily Arm	£19
Holed Out Designer	£13
Holed Out Golf Comp	£20
Hostages	£14
Inter Dictor 2	£26
Iron Lord	£15
Jigsaw	£27
Lemmings	£20
Lost Temple	POA
Mad Prof Mariarti	£17
Masterbreak	£16
Man at Arms	£14
MahJong Patience	£15
Manchester United II	£19
Mig 29	£24
Nebullus	£21
Nevryon	£14
Nevryon II	£20
Olympics	£14
Pandoras Box	£18
Pipe Mania	£17
Power Band	£14
Puncman 1 & 2	£16
Puncman 3 & 4	£16
Pysanki	£14
Quazer	£10
Real McCoy	£22
Real McCoy 2	£23
Real McCoy 3	£22
Redshift	£14
Return to Doom	£16
Repton 3	£14
Saloon Cars Deluxe	£27
Spitfire Fury*	£22
Splice	£25
Sporting Triangles	£24
Superior Golf	£14
Superpool + Break 147	£19
Swiv	£19
Talisman	£12
Timewatch	£24
Trivial Pursuit	£22
Twin World	£15
U.I.M.	£23
White Magic 2	£15
Wimp Game	£13
Worldscape	£16
XFire	£19
Zelanites	£23

Miscellaneous

Ancestry	£59
Arccomm 2	£38
Arcterm 7	£64
Armadeus Sound	£60
Avante Garde Fonts	£23
BBC DFS Reader	£6
Broadcaster Loader	£65
Compression (CC)	£38
Equasor	£38
FlexiFile	£97
Genesis Plus	£68
Genesis 2	£99
Investigator 2	£22
JX Archi Colour Printer Driver for Citizen & Star Printers	£15
Magpie 2	£42
Notate	£42
Numerator	£66
Pin Point	£65
Presenter 2	£29
Presenter Story	£145
Rainforest	£17
Revelation 2	£95
Rhapsody in Blue 2	£45
Score Draw	£46
Show Page	£127
Speech!	£15
The Victorian	£17
Time Tabler	£549
Toolkit (Clares)	£35
Touchtype	£40
Tracker	£39
Turbo Driver BJ10E	£42
Vox Box	£46
WorldScape	£17

LANGUAGES (Archimedes)

ISO-PASCAL; FORTRAN 77 **£77 each**
Assembler; LISP; Prolog X **£149 each**

Desktop C	£199	Logotron Logo	£45
Macro Assembler	£40	Risc Basic	£120
Robo Logo	£69	Risc FORTH	£110
BASIC Compiler	£77	Cambridge Pascal	£95

Archimedes External Disc Drive Interface

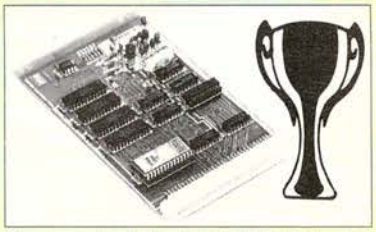
With this interface it is possible to connect almost any 5.25"/3.5" disc drive with its own power supply to the Archimedes. Upto 4 disc drives can be connected. Fully Buffered Board. NO SOLDERING is involved. Supplied complete with necessary lead.

Price £21

Back Plate Extension

- A300/400 **£15;** • A3000 **£14**

Archi Real-Time Digitiser



Now supplied with NEW RISC OS Version Software

Watfords' Archimedes Video Digitiser is the most sophisticated digitiser ever designed for a micro. It provides a fast and flexible means of capturing images from a video camera or recorder for display and manipulation on the Archimedes range of Micros. Off-air televison signals may also be digitised via a video recorder or TV tuner. Please write for further details.

Price £119

A Set of Colour Filters for colour image grabbing using a video camera **£16**

Archi Graphic Tablet

The Archi Graphic Tablet offers performance and accuracy comparable to other tablets priced at well over £400, and has the useful addition of a liftable cover, which can hold tracing material or menu templates securely. The package is supplied complete with sophisticated Archi software. (Now, fully LinCAD compatible. Recommended by Linear Graphic for use in Education).

(FREE this month, PC Mouse Drivers & Art package)

Special Price £199

(Price includes Tablet, Leads, Software & Puck)
Stylus Optional Extra **£20**

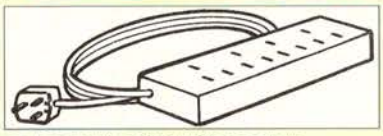
Archi Graphic Tablet Junior. Working area 9" x 6". Price includes Stylus **£125**

Surge Protector Plug

Fitted in place of your normal mains plug, this device protects your equipment (and data from corruption), against mains high voltage translent spikes/surges caused by lightning or thermostats switching.

Protection for only **£8.50**

4 Way Mains Distribution Socket



4 way top quality mains trailing sockets.
Supplied wired up with mains plug ready for use.
Can be screwed to floor or wall if required.
Very useful for tidying up all the mains leads from your peripherals.

£9.50

Aries Spike Cleaner Unit

A 4 way mains distribution unit as above with a built-in Surge Arrester, providing protection for your complete Computer/Hi-Fi System

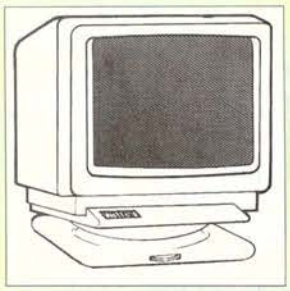
£16

8 Way DIP Switch

Increase the speed of your Disc Drives by soldering this switch to your BBC B or B+ keyboard

Only **£1.00**

Continued→ → → → → → → → →



FREE
Connecting lead with every monitor purchased from us. Please specify type required.

Microvitec Monitors

- **1431** – Standard Resolution Monitor £169
- **1451** – Medium Resolution Monitor £209
- **Cub3000** Medium Res for A3000 £189
- Dust Cover for Microvitecs £5.50
- **Touchtec 501 Touch Screen** £239

Now 3 years Parts & Labour warranty on all Microvitec Monitors

Multiscan Colour

• Eizo 9060S	£389	• NEC 6FG	£1525
• Eizo F550i	£725	• Taxan 770LR	£362
• Eizo T560i	£995	• Taxan 787	£249
• Eizo T660i-T 20"	£1599	• Taxan 795	£397
• NEC 3FG	£370	• Taxan 875	£679
• NEC 4FG	£465	• VIDC Enhancer	£25
• NEC 5FG	£850		

Aries AlphaScan Monitor

Pound for Pound, the AlphaScan VGA Multiscan monitor provides the maximum performance and greatest flexibility of any 14" colour monitor for the Archimedes micro.

Its multiscan circuitry provides automatic adjustment for frequencies between 30 and 60KHz horizontal, and 50 and 90Hz vertical. Its 0.28mm dot pitch high resolution tube provides super sharp text graphics, while a high speed (70/72Hz) refresh rate provides a flicker-free display easing the eye strain. The Multivideo VIDC Adaptor supplied (free) with the monitor allows high resolution operation in all screen modes. **£325**

- Aries Alphascan 17" Plus £495

Philips Monitors

- **BM7502** 12" Hi-res Green Monitor £67
- **CM8833** 14" Med. Res Colour Monitor £172
- Dust Cover for Philips Monitors £6

STAR BUY

Aries A2000 Colour Monitor

This attractively finished, etched screen medium res monitor is supplied complete with built-in speaker, volume control and video input. All controls are located on the front panel for ease of use. Ideal for BBC, BBC Master, Archimedes and Amiga.

Only £159

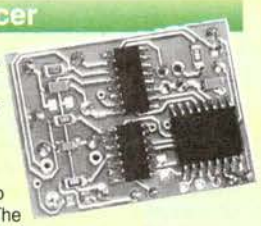
Spare Monitor Leads

BNC Lead for Zenith or Philips	£3
Skart Monitor Lead	£5
RGB lead for TAXAN Monitors	£3
Archimedes Colour Monitor Lead	£7.50

Integrex Ink Jet Printers

- Colour Jet 132 Printer £449
- Paper Roll £6.50
- BBC Screen Dump Software £10
- Colour Cartridge £21
- Black Cartridge £12.40
- 100 A4 OHP transparencies £55
- 8K Serial Interface Optional £123
- Colour Jet 2000 £529
- Betajet Ink Jet Printer £185
- Betajet Cut Sheet Feeder £43

VIDC Enhancer



This unique VIDC add-on board for the Archimedes, caters for all types of Multiscan and VGA monitor and mode requirements. There are 2 versions to suit all requirements. The multimode software supplied, provides all the new modes for the selected monitor type, including the now standard Computer Concepts modes. With VGA monitor, you are no longer restricted to a few modes. A Desk Top application supplied on disc, allows new modes to be designed and existing modes to be modified for particular monitors.

Super VGA VIDC Card: Its unique design allows the horizontal and vertical sync to be buffered and have the polarity changed under software control **£45**

MultiVideo VIDC Card: As above but for MultiScan monitors only. **£25**

SPECIAL OFFER

H P Desk Jet 500C Colour Printer £375*
Archi Printer Driver £15

* Price includes 3 years extended parts and labour warranty at no extra cost.

For 3 years On-Site maintenance £45

Panasonic Printers

KX-P1123	£126	KX-P2180C	£156
KX-P1124i	£170	KX-P2123C	£198
KX-P1170	£99	KX-P2180M	£159
KX-P1624	£270	KX-P2123M	£176
KX-P1654	*£332	Colour Kit for	
KX-P1695	£270	P2180M/2123M	£–
KX-P2624	*£270		

*** Price includes 12 months On-site warranty**

Cut Sheet Feeders

P36 – 1124/24i £79 **P37** – 1123/70/80 £69
P38 – P1624/95; P2624 £129

Buffers

P12 4K Buffer Board for KX-P1081 £55
P14 32K Buffer P1123/24/70/80 P1540/92/95; P1624/54/95 £16

Serial Interfaces

P13 for P1123/24/24i/70/80/1624/54/95/2624 £49

Original Panasonic Ribbons

Guaranteed to last 3 million characters

P110 for KX-P1081, 1592 & 1595 £6
P115 for KX-P1180 £7 **P145** for KX-P1124 £7
P140 for KX-P1540 £8 **P155** for KX-P1624 £8
Colour Ribbons for KX-P1081, 1592 & 1595 Brown, Blue or Red £9 each
P150C Colour for P2123/2180 £15

Citizen Printers

• 120D Plus	£95	• Swift 24E#	£195
• 224	£174	• Swift 24X	£299
• PN-48	£199	• 24X Colour Opt	£32
• Swift 9	£145	• PN48 Ribbon	£4

- AH29804 Manual Cut Sheet Feeder for Swift 9/24/124. Holds 50 Sheets £29

FREE Colour Option with Swift 24E
+ FREE 2 years Parts and Labour warranty on all Citizen Printers

- Swift 9 Colour Option £19
- Swift 24 Colour Option £29
- Swift 24 Ribbons Black £4 Colour £13
- Swift 24X Ribbons Black £8 Colour £16
- Citizen/Archimedes Colour Printer Driver £15

Roland Plotters

• DXY1100	£490	• DXY1200	£620
• DXY1300	£825	• DXY2500	£2345
• Sketchmate A3	£499	• Sketchmate A4	£308

- Roland plotter Pens, Fibre tip £7.50

Star Printers

LC15	£175	SJ48 Inkjet	£172
LC20	£102	XB24-200 Colour	*£295
LC24-15	£241	XB24-250 Colour	*£355
LC24-20	£155	XB24 Colour kit	£29
LC24-200	£166	ZA200 Colour	*£240
LC24-200 Colour	£205	ZA250	*£312
LC200 Colour	£143		

- Star/Archimedes Colour Printer Driver £15

* Includes 12 months On-site warranty

Cut Sheet Feeder

LC10/200/24-10	£65	LC15/LC24-15	£125
XB24-10	£80	XB24-15	£139

Serial Interfaces

8K Ser LC-200; LC24-200; FR10; FR15; XB24-10; XB24-15 £52

Buffers

32K Ram Card for LC/XB24-10; 15; LC200 £55

Ribbons

LC10; LC10-II; LC15	Black £4;	Colour £6
LC-200; LC24-200	Black £5;	Colour £12
XB24-10; XB24-15	Black £5;	Colour £12

Laser Printers

All Laser Printers include 12 months On-site maintenance

Brother HL-4	4ppm	£499
Brother HL4-V	4ppm	£640
Brother HL4-PS Postscript	4ppm	£1040
Brother HL8-V	8ppm	£984
Canon LBP4 LITE	4ppm	£495
Canon LBP4+ 1.5M RAM	4ppm	£639
Canon LBP-8III Plus	8ppm	£960
Epson EPL4300	4ppm	£590
Epson EPL4000	6ppm	£485
Epson EPL7500	6ppm	£1145
Epson EPL8100	10ppm	£960
HP Laserjet IIP+	4ppm	£525
HP Laserjet III	8ppm	£1010
HP Laserjet IIID	8ppm	£1495
HP Laserjet IIIP	4ppm	£685
HP Laserjet IIIsi	16ppm	£2515
NEC Silentwriter S62P P/script	6ppm	£1070
NEC Silentwriter 266	8ppm	£670
NEC Silentwriter 290P P/script	8ppm	£1389
Panasonic KX-P4410	5ppm*	£529
Panasonic KX-P4420	8ppm*	£618
Panasonic KX-P4430 Satin Print*	5ppm*	£590
Panasonic KX-P4451	11ppm*	£1085
Panasonic KX-4455 Postscript	11ppm*	£1450
Star LP-8 III 2	8ppm	£1249
Star LP-8 III	8ppm	£905
Star LP-8 Star(post)script	8ppm	£1135
Star LP-4	4ppm	£565
Star LP-4 Mk 3	4ppm	£649
Star LP-4PS Postscript	4ppm	£775

* Now with 2 years On-site warranty

Laser Toners

Canon 2, 3 & 4	£46	Star LP4/LP8	£56
Epson GQ	£13	KX-P4420/50	£19
EPL 4100	£69	Laserjet HP IIP & IIIP	£42
EPL7100/7500/ 8100	£125	Laserjet II/D, III/D	£48
		Qume Crystal (3)	£58

Laser RAM Upgrades

IIP; III/P 1Mb	£51	EPL7100 256K	£39
IIP; III/P 2Mb	£88	GQ5000 512K	£42
IIP; III/P 4Mb	£135	KX4420/50 1M	£75
II & IID 1Mb	£64	KX4420/50 2M	£115
II & IID 2Mb	£99	KX4420/50 4M	£195
II & IID 4Mb	£146	Star LP8 1M	£139
Canon LBP4 1M	£105	Star LP8 2M	£275
Canon LBP8 2M	£125		

Laser Drum & Developer

• Epson Drum	GQ5000	£93	EPL7100	£129
• Panasonic 4420 Drum		£60	Developer	£59
• Panasonic 4450 Drum		£93	Developer	£80
• Qume Drum		£76	Developer	£56

Jetpage Postscript Cartridge

• HP IIP/III	£225	IID & IIID	£227

Various Add-Ons

- Laserjet Appletalk Interface £135
- HP Adobe Postscript £399
- Pacific Page Postscript £259
- HP Premier Font Collection £28
- Laserjet various Font cartridges from £45

Hewlett-Packard Printers

# Desk Jet 500	£270	*Paintjet XL 300	£1785
Desk Jet 500 Col.	£375	*Quiet Jet Plus	£382
*Paint Jet Colour	£518	*HP Think Jet	£265
*Paintjet XL	£1196	*HP Deskwriter	£299

3 years extended Parts & Labour warranty FREE
* Price includes 12 months on-site warranty

- DeskJet 500 Cart. Black £15; Colour £27
- Paintjet Cartridges Black £19; Colour £23
- Desk Jet 500 256K RAM cartridge £69
- HP Epson FX Emulation Cartridge for Desk Jet £59
- DJ 500 High Capacity Black Cartridge £21
- DJ 500 Colour Archi Printer Driver £15

Plug In Font Cartridges for DJ 500

- 22706B – Prestige, Elite, Line Draw fonts £55
- 22706C Letter Gothic & HP Line Draw fonts £56
- 22707P – Proprint Emulation Cartridge £57
- Desk Jet Unlimited (Book No VAT) £19.75

Canon Bubblejet Printers

	Printer	CSF	D'ble Bin	Ink Cart
BJ10EX	£165	£43	–	£16
BJ20	£247	–	–	–
BJ300*	£284	£88	£65	£12
BJ330*	£376	£110	£79	£12
BJC800C	£1395	–	–	–

* Includes 12 months On-site warranty

- Spare Battery pack for BJ10E £33
- BJ10EX – Archi Turbo Driver £42

Special Offer:
Canon BJ10EX Printer + CC's Turbo Driver £210

NEC Pinwriter Printers

- P20 £178
- P30 £237
- P60 £322
- P70 £396
- P90 £605
- P60/70 Colour Option Kit £59
- Ribbons Black for P20/30 £6 for P60/70/90 £7
- Ribbons for P60/70/90 Black £9 Colour £13.50

Cut Sheet Feeders
P20 £59; P30 £85; P60 £89; P70/90 £80

Epson Printers

DFX5000	£1075	LQ1170	£432
DFX8000	£1940	LQ2550+	£675
FX850	£258	LX400	£95
FX1050	£327	LX850+	£138
LQ100	£147	LX1050	£206
LQ570	£201	SQ870	£415
LQ870	£357	SQ1170	£565
LQ1060 Colour	£585	SQ2550	£625
LQ1070	£310		

Cut Sheet Feeders for
LQ570, LQ870 £47
LX400/850/LQ200/400/450/500/550 LQ1010/1070/1170 £72
LX1050 £115 FX850/LQ860 £128
FX1050/LQ1060/SQ850 £155
LQ2550 £299 SQ2550 £210

Tractor Feed for
LQ800 £44; LQ850/FX850 £69; LQ1050/FX1050 £85; LQ2500 £90; LQ2550 £90.

Accessories

- EX800/1000 Colour Option £45
- EX800/1000 Colour Ribbon £14
- LQ2500 Colour Option £65
- Multifont Card for LQ550/850/1050 £95

Epson Printer Interfaces
RS232 £28 RS232 + 2K Buffer £52

Printer Leads

BBC Centronics 4' long	£5
BBC Centronics 6' extra long	£7
Compact's Special Centronics Lead	£7
Nimbus Centronics Lead	£6
IBM/Archimedes Parallel Lead 6'	£5
IBM/Archimedes Parallel Lead 5 metres	£10
IBM/Archimedes Parallel Lead 10 metres	£15
Double Ended 36 way Centronics Lead 4'	£7
Double Ended 36 way Centronics Lead 6'	£9
RS232 Leads (Various)	P.O.A.

Laser Direct

- Special High Res Card 600 DPI for Canon LPB 4 & LPB 8 Laser Printers £315
- LPB 4 Printer plus High Res Card £975
- LPB 8III Printer plus High Res Card £1275
- LPB 4 Optional Paper Tray £79

Fujitsu Printers

B-100	£205	DL1100	£217
B-200	£270	DL1100 Col	£267
DL-900	£181	DL1200	£363

Ribbons
DL900/1100/1200 Mono £5 Col. £11
B-100/200 Ink Cartridge £15

Concept Keyboards

Standard A3 Keyboard with BBC Software	£138
Standard A4 Keyboard with BBC Software	£109
Archi A3 Keyboard	£139
Archi A4 Keyboard	£110

Listing Paper (Perforated)

- 1,000 Sheets 9.5" x 11" Fanfold Paper £7
- 2,000 Sheets 9.5" x 11" Fanfold Paper £11
- 1,000 Sheets 9.5" x 11" NCR 2 Part Fanfold £21
- 1,000 Sheets 15" x 11" Fanfold Paper £9
- 2,000 Sheets 15" x 11" Fanfold Paper £16
- 1,000 Sheets true A4 Fanfold Paper 70gms £11
- 2,000 Sheets true A4 Fanfold Paper 70gms £21
- Teleprinter Roll (Econo paper) £4
- Telex Roll 50 metre £3

(All our Fanfold paper is Micro perforated leaving a smooth clean edge when the tractor feed strips are detached).
Carriage 1K Sheets £2.50, 2K Sheets £3.00

Printer Labels

(On continuous fanfold backing sheet)

1,000 off, 90 x 36mm (Single Row)	£6.00
1,000 off, 90 x 36mm (Twin Row)	£6.25
1,000 off, 90 x 49mm (Twin Row)	£7.50
1,000 off, 102 x 36mm (Twin Row)	£6.75

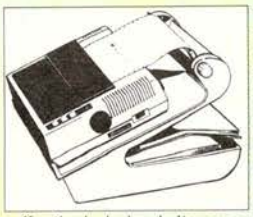
Laser Printer Labels on A4 Sheets

3750 off, 70 x 29mm (3 Rows x 10)	£15.50
2400 off, 70 x 37mm (3 Rows x 8)	£15.25
2625 off, 70 x 42mm (3 Rows x 7)	£15.00

Printer Ribbons & Various Dust Covers

Type	Ribbons	Dust Covers
BBC B/BBC Master	–	£4.00
Archimedes Micro pair	–	£9.00
Citizen 120D	£2.75	£4.50
DMP2000/4000	£3.75	£4.95
EX800/1000	£3.50	£5.00
RX/FX80/85/800/MX80	£2.95	–
FX/MX/RX100/1000	£3.95	–
Kaga/Taxan KP810/815	£3.25	£5.00
LQ400/500/550/800/850	£3.25	£6.00
LQ1050/LQ2500	£12.00	–
LX80/86	£2.75	£4.50
LX400/800/850	£3.50	£5.00
M1009/GLP	£2.95	£3.75
NEC P2200	£4.50	£5.00
Panasonic KX1080/81	£6.00	£5.00
Panasonic KX-P1124	£7.00	£5.00
Star LC24-10	£2.95	£6.00

Professional Printer Stand



The professional printer stand takes hardly more space than your printer. Due to the positioning of the paper feed and re-fold compartments ie. one above the other, the desk space required for your printer functions is effectively halved. Its ergonomic design ensures smooth paper flow and automatic refolding.

80 Column version £24 (carr. £3)
132 Column version £29(carr. £4)

Universal Printer Sharers/Changer

Connect up to 5 Micros to 1 printer or 5 printers to 1 Micro with our combined, Sharer/Changer switch boxes.

Standard Low Cost Type

Connects	Serial	Parallel
2 to 1	£10	£11
3 to 1	£13	£14
4 to 1	£16	£17

Professional Type

Connects	Serial	Parallel
2 to 1	£17	£18
3 to 1	£22	£25
5 to 1	£34	£38

Cables extra at £6 each

Cross Over Manual Switch

2 In/2 Out Parallel	£29
2 In/2 Out Serial	£28
3 In/2 Out Serial	£36

Auto Printer Sharer

Connects	Serial	Parallel
2 to 1	£40	£45
4 to 1	£62	£49
8 to 1	–	£89

256k Multi Spooler

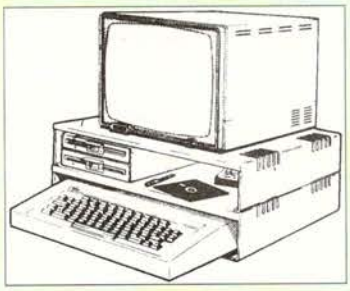
These Auto Parallel Printer Sharers have built-in 256K of Printer Buffers. They can be used as Auto Sharers, Printer Buffers or both.

- 2 In/2 out £135
- 4 In/2 out £169
- 8 In/1 out £199

Compact Converter Units

Serial to Parallel £36 Parallel to Serial £37

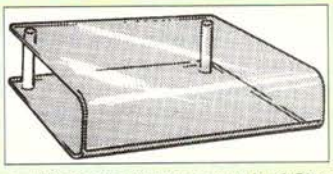
Plinths for the BBC B, BBC Master & A3000



Protect your computer from the heat of your VDU. Our micro plinths have slots for maximum ventilation. The single plinth is suitable for a BBC and VDU, whilst the double height version provides enough room for our stacked disc drive and other peripherals like, Eprom programmer, music unit or simply discs & stationery. The computer slides neatly in the lower section allowing easy access to remove the lid. Colour: Matching BBC Beige.

- Single BBC Plinth 420 x 310 x 105mm £13
- Double BBC Plinth 420 x 310 x 210mm £24
- Single Master Plinth 490 x 310 x 105mm £14
- Double Master Plinth 490 x 310 x 210mm £26
- A3000 Single Plinth (very sturdy & precision made), has a slot on the left for the switch & cut out on the right for 3.5" Disc Drive £15

Perspex Printer Stand



Give your Computer System a touch of Class with our elegant, smoke finished Perspex Printer stand.

80 Column version £16 (carr £3)
136 Column version £20 (carr £4)

Continued→ → → → → → → → →

QUEST MOUSE Mk III

- Quest Mouse III & Quest Paint £59
- Quest Mouse III, Quest Paint, AMX Stop Press & Pagefont £89
- Quest Mouse III only £30
- Quest Paint Software only £34
- Quest Font Disc (22 Text Fonts) £15
- Quest Mouse Mat (Red or Blue or Green please specify) £3
- Quest Colour Dump Disc – This new software allows you to print direct from Quest Paint to your Integrex Colour Printer £18

  (P.S. Quest Paint is not compatible with BBC Compact)

Quest Paint is the winner of the BBC Acorn User 1990 Award for the Best Art/Graphics software

ConQuest

Quest combined with ConQuest and Acornsoft GXR ROM make up THE MOST POWERFUL drawing packages available for the BBC range. Quest Paint is able to take advantage of almost any additions to your machine, such as Shadow or Sideways RAM. ConQuest takes this principal even further, by utilising the otherwise normally incompatible Sideways RAM facility by holding pictures in them.

ConQuest ROM Package £30
(Price includes software in ROM and a comprehensive Manual).
(Not Compatible with BBC Compact)
(P.S. Conquest is a Quest Paint extension ROM).

Quest – Tracer ball

An attractively finished, extremely reliable, mouse replacement, input device. Requires very little desk space. Connects directly to your BBC B, BBC Master or Archimedes Micro.

QT-10 BBC/Master Version **£25**
QT-20 Archimedes Version **£26**

Mouse Cleaning Kit

To obtain trouble free operation and prolong the life of your mouse, the high tech rodent requires regular cleaning. Our deluxe mouse cleaning kit is ideal for the purpose £3

VISA Access

CREDIT CARD 24 HOUR Ansaphone Hot Lines (0923) 250234 or 233383

Archi Mouse Port Splitter

Our handy little splitter unit eliminates the risk of damaging your micro due to constant plugging and unplugging of the mouse by allowing you to connect both, a joystick and a mouse simultaneously to your Archimedes. £15

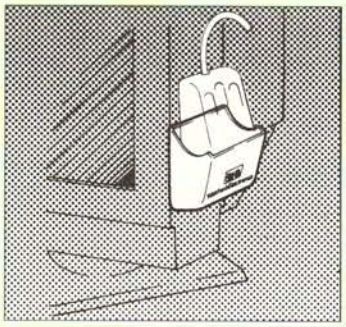
Mk III AMX MOUSE

- **AMX Mouse plus Super Art £54**

(Please specify for BBC, Master or Compact)

- AMX MOUSE ONLY £29
- AMX SUPERART Package £29
- AMX STOP PRESS – A Desktop publishing software. Works with Keyboard, Joystick or a mouse £25
- PAGE-FONTS – Over 20 Fonts for use with AMX Pagemaker £13
- AMX DESIGN (ROM) £29
- AMX EXTRA EXTRA £16
- MOUSE MAT £3

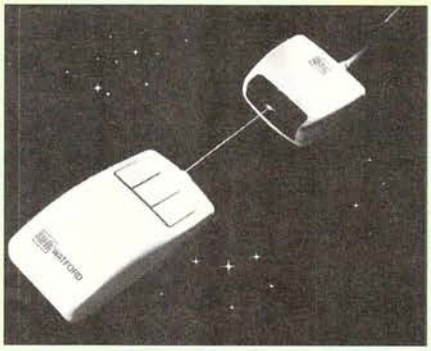
WE Mouse House



Treat your mouse to a cosy Mouse House. This handy little gadget solves the problem of where to store your mouse when it is having a rest. Made of sturdy plastic, the WE Mouse House attaches to the side of your computer, monitor, disc drive etc.

Only £3

Archi Cordless Mouse



Features
- Infra Red Signal Transmission
- High Resolution 200 DPI
- High Tracking Speed of 600mm/s up
- Anti-static Silicon Rubber Coated Ball
- Low Friction Teflon Footpads
- Power - by two AAA size batteries (not included)
- Automatic Standby Mode after 5 seconds inactive
- Auto Power Shut-Down after 20 seconds inactive

Price £39

BEEB VIDEO DIGITISER

"Test Bureau Approved for Use in Education"

Using any source of composite video (colour or monochrome) and the Watford Beeb Video Digitiser, you can convert an image from your camera into a graphics screen on the BBC Micro. This uses the full graphics capacity of the BBC micro in modes 0, 1 or 2. The video source may be a camera, video recorder or television, and is connected via the video output socket. The software supplied includes a sophisticated, fast screen dump routine.
Images produced can be compressed, stored to disc, printed on an Epson compatible printer, directly used to generate graphics, analysed for scientific and educational use or converted to other formats e.g. Slow Scan TV or receiving a picture from a remote camera using a modem. The output from the digitiser exactly matches the graphics capability in each mode, with up to 8 levels of grey in mode 2. The unit connects into the User Port and automatically scans a complete picture in 1.6 seconds.

£99

(BBC B+ and Master compatible, except Master with Econet)

(Price includes) Digitiser Unit, Software in ROM & a Comprehensive Manual)

Beeb Hand Scanner

Hand-held Scanner for the BBC Micro

Watford Beeb HandScan is a compact unit which will allow photographs, diagrams, or any other documents to be digitised quickly and easily, to then be used in a desk top publishing package, art program, or even in your own Basic programs!

The HandScan plugs directly into the 1MHz bus on the BBC while a comprehensive set of utilities provided by the sophisticated ROM firmware. The scanner has a resolution of either 100 DPI or 200 DPI when accuracy is essential. Pictures as wide as 4" may be scanned in mode 0 and various types of dithering may be selected to simulate the grey levels of a scanned picture.

All necessary software has been included in the firmware to allow the scanner to read images directly into our Wapping Editor with little more than the click of the mouse. The digitised picture may then be incorporated into your magazine, newsletter, report or any other document.

Beeb HandScan & Firmware **£99**

Winner of the BBC Acorn User 1990 Award for the Best DTP/Word Processor

The Wapping Editor

The Wapping Editor from Watford Electronics represents a breakthrough in Desktop Publishing for the Beeb. The package includes a 64K ROM containing ALL the software needed to get into print fast; a very sophisticated graphics module, professional quality typesetting software, a word processor, a comprehensive font editor for designing your own typefaces, and a variety of printer dumps. This mouse-driven system is designed for the BBC B, the B+ and Master computers and will take full advantage of any Sideways and Shadow RAM that may be fitted. It will run under DFS, ADFS and Network filing systems and requires as a minimum just a single 40 track drive.

Included with the system is a utility disc containing several high quality fonts, various utilities and a ROM image of a Support ROM. A comprehensive 100 page manual completes the package. The Support ROM contains routines to allow an area to be rotated to any angle or distorted to any four-sided shape. Also included are facilities to draw ellipses at any angle and sectors, segments and arcs (in Master or BBC B with Acorn GXR). Another of the features of the Support ROM is a 'Turbo DFS' which gives DFS access times comparable with those of ADFS.

Page Layout Section

The Wapping Editor may be used to create pages of any size from an A6 to a full A3 page. If none of the eight default page types suit your purpose, the stand-alone page creation program may be used to create pages to your own requirements. By using proportionally spaced fonts and genuine microspacing it is possible to print over 150 characters across an A4 page. A unique feature of the Wapping Editor is the 'A5 x 2' page size allowing two A5 pages to be printed side by side onto a single A4 sheet.

The graphics module incorporates the facilities like: pencil, brush, airbrush, polygon, circle, eclipse, fill, cut & paste, etc.

Text may be typeset, either justified or unjustified, in any font anywhere on the page. Simply select which font and text document you wish to use, and pull out a rectangle on the page where you want the text to be – it's as simple as that! Multiple columns may be printed just as easily and a special 'expand' feature may be used to expand the microspacing so that the document exactly fits the space defined.

Word-Processor

The integral word processor is the ideal tool for producing your text documents, although text can of course be read in from any of the other popular word processors such as View, Wordwise etc.

The Font Editor

The font editor module will allow you to design your own typefaces or to modify the ones provided on the utility disc. This sophisticated editor has numerous functions designed to take the tedium and frustration out of producing good looking, well balanced fonts. Each character may be individually proportionally spaced and characters of any size up to 16 x 16 pixels may be defined.
Pictures may also be 'grabbed' from a video source by using the Watford BEEB Video Digitiser.

Wapping Editor Software Pack £49
Wapping Editor plus Mouse £69

(Wapping Editor only works with Master Compact if a Mertec Expansion box is fitted)

Wapping Art Disc

Over 250K of clip art to cut and paste into your Wapping Editor pages. Pictures include maps, transport, people, media, sport, games etc.
Two 'ratio' screens for use with hi-res and rotated A5 pages to ensure images are not distorted when printed out.

Music writing symbols in the form of pattern and brush for quick production of manuscripts are included together with staves.

There are two prepared hi-res pages laid out for printing labels, both single and double width. Ready made label designs are included but these can be easily replaced with your own designs.

A Mode 0 screen dump routine is also included. To pack such a large amount of data onto the discs the screens have been compressed and routines to compress and expand Mode 0 screens are included on both discs. Using the packing routine you can archive large numbers of screens onto a single disc.

£15

Wapping Font Disc 1

Sixteen additional fonts, including smaller version of Oberon and Daisy and two new sizes of the standard font for the Wapping editor.
Also included are three Mode 0 screens containing giant 'headline' fonts to cut and paste to create extra smooth headlines.
Supplied complete with instructions.

£12

Wapping Font Disc 2

This new addition to our Wapping range of DTP software provides you with additional 23 fonts for the Wapping Editor DTP pack. (80 track discs only).

£13

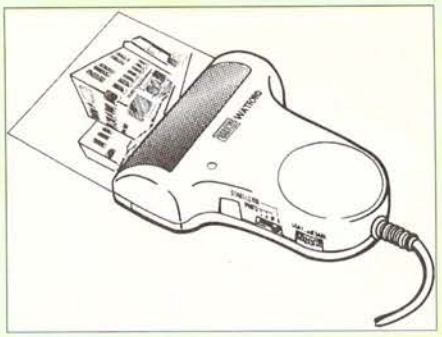
Archi A4 Scanner

This most advanced Archi A4 image scanner is supplied complete with ROM based podule software. Features provided include facilities for zooming in on an image and inverting the image in X and Y directions, saving and printing of the sprite created. Interactive help is supplied using the !HELP application on the Acorn applications discs.
The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, diagrams, etc., with its fast ten page automatic document feeder, but it can also detach from the feeder to become a convenient hand-held full page scanner for larger documents or pictures.
Scanned image control can be freely adjusted in increments of 10 dots per inch from 100 up to 400 dpi resolution with 64 levels of grey scaling. A built in shading controller and manual brightness control achieve optimum image clarity.
Unlike some scanners, which use a red light source, the Watford scanner uses a yellow/green source which vastly improves the light/dark contrast, thus eliminating the effect where any red-based colours are faded down to white and so do not show up in the scanned image.
All these features and facilities combine to make the Archi Page Scanner the fast and convenient way in which to add that extra impact, interest and clarity to documents, reports, instruction sheets, manuals, news letters, etc., from your Archimedes DTP package.

New Low Prices:

Archi A4 Scanner	£269
Sheet Feeder for above	£75
Scanner + Sheet Feeder	£359

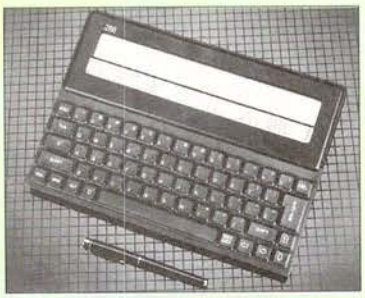
Archi Mk II Hand Scanner



Watford's Mk II hand scanner has a maximum resolution of 400 dpi. The scanning width is 4". The sophisticated software is supplied in a 64K ROM, located on a standard single width expansion podule. As you scan a page, the image appears in the scanning window on the screen, scrolling up in real time. Other facilities include Cropping and scaling to any size including stretching and squashing in X and Y directions separately. Colour tinting. X and Y flip. Edge detection which turns solid objects into outlines.
Images can be printed on any printer supported by RISC OS.
On-screen help is provided via the RiscOS interactive help facility. (Please write in for full technical details).

AHS-4 Archi 300/400 Version £109
AHS-3 Archi A3000 Version £119

Z88 Portable Micro



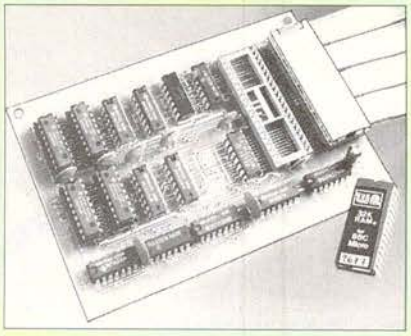
• Z88 Portable Micro	£179		
• 32K RAM Pack or 32K EPROM Pack	£16		
• 128K RAM Pack or 128K EPROM Pack	£32		
• 512K RAM Pack	£86		
• 256K Eprom Pack	£55		
• Z88 Eprom Eraser Unit	£38		
• Z88 Carrying Case	£8		
• AA Nicad Rechargeable Battery	£1.50		
• Battery Charger Compact & Fast	£6		
• Z88 Serial Printer Cable	£8		
• Z88 Parallel Printer Cable	£18		
• Z88 to Archi Link	£15		
• Z88 to BBC Link	£8	• Z BASE	£56
• Z88 to PC Link II	£27	• Z88 to Macintosh	£32
• Z88 Mains Adaptor	£9	• Z88 Modem	£114

VISA

CREDIT CARD 24 HOUR Ansaphone Hot Lines (0923) 250234 or 233383

Continued→ → → → → → → → →

32K Shadow RAM/Printer Buffer Card Expansion Board



A MUST FOR WORD PROCESSING

Simply plug the ribbon cable plug into the 6502 socket and gain a massive 32K of extra RAM.

- "VIEW" Wordprocessor users can now type in letters in 80 columns and have up to 28K bytes free – 5 times as much as normal.
- In WORDWISE (or WORDWISE-PLUS), preview in 80 columns with the full 24k of text in memory. This product is recommended as an ideal complement by Computer Concepts.
- Use the full 32k or the bottom 12K of the expansion RAM as a printer Buffer. (P.S. Only 12K printer buffer can be used with Wordwise & WW+, due to the way they are written).
- Unique facility to turn ROMs off and on again.

Only £54

- **ARIES B-32 Shadow RAM Card £55**

Commander Joystick

Features:

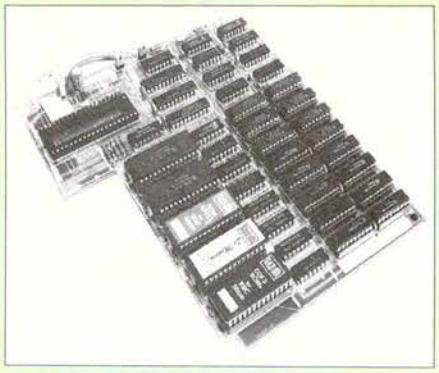
- Direct connection to BBC Analogue input port – no interface needed.
- Fully compatible with all BBC Joystick controlled games programmes.
- Switchable springs allow selection of floating or centring operation.
- Trim adjusters for both X and Y axes for fine centre adjustment.
- Convenient stick mounted fire button with additional base buttons.

Price: £15

Voltmace Joysticks

Delta 3B Single Joystick	**£10**
Delta 3B Twin Joysticks	£15
Delta 3C Joystick for Compact	£10
Delta 14B Single Joystick	£11
Delta 14B/1 Adaptor Module	£12
Transfer Software Disc-Tape	£7
Delta-Cat A mouse eliminator Joystick for the Archimedes	£24
Analogue aircraft style yoke Joystick to run in the analogue port of the BBC B & Master 128	£25

ROM/RAM Card



- NO SOLDERING required to fit the board.
- Fully buffered for peace of mind.
- Compatible with BBC micros (not BBC+ or Master).
- Total number of ROMs increased from 4 to 8.
- Up to 8 banks of sideways RAM (dynamic).
- Option for 16k of battery backed CMOS RAM (CMOS RAM needs one ROM socket).
- Software Write protect for ALL RAM.
- Read protect for CMOS RAM.
- Separate RAM write register (&FF30 to &FF3F).
- Automatic write to currently selected RAM socket for convenience.
- FREE utilities disc packed with software.
- Large printer buffer.
- UNIQUE fully implemented RAM FILING SYSTEM (similar to the popular Watford DFS).
- ROM to RAM load and save facilities.

The SFS (Silicon Filing System) can utilise up to the full 128k of RAM (with the SFS in any paged RAM) as a SILICON DISC. This behaves as a disc drive, with all the normal Watford DFS features (including OSWORD &7F for ROMSPELL, etc.) to provide an environment that looks like a disc but loads and saves MUCH faster.

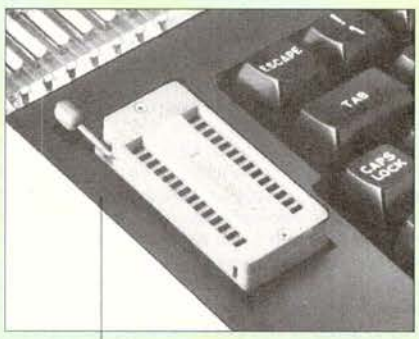
PRICES:

• ROM/RAM card with 32k DRAM	**£42**
• ROM/RAM card with 64k DRAM	**£54**
• ROM/RAM card with 128k DRAM	**£89**

OPTIONAL EXTRAS:

• 16k plug-in Static RAM kit	**£8**
• 16k DRAM for Upgrade	**£13**
• Battery backup	**£3**
• Read and Write protect switches	**£2 each**
Complete ROM-RAM card with all options fitted	**£109**

Sideways ROM ZIF Socket System



Allows you to change your ROMs quickly and efficiently, without having to open the lid. The ZIF socket is located into the ROM Cartridge's position. It is very simple to install. No soldering required. Also included in the price is a plastic see through storage case with antistatic lining, which allows you to store 12 ROMs.

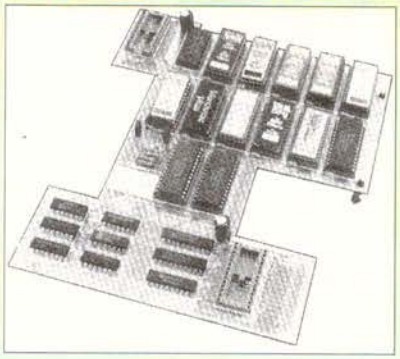
£18

ROM Cartridges for the BBC Master

Will accept the larger Piggy Back ROMs like Interword, Quest, etc.

• Twin **£8;** • Quad **£13**

Solderless Sideways ROM Socket Board



- Increases your BBC Micro's ROM capacity from 4 to 16.
- **No soldering required.**
- Socket 14 takes two 6264 RAM chips.
- Read protect to make RAM "Vanish" allows recovery from ROM crashes.
- Battery backup option for RAM chips.
- Supplied ready to fit with comprehensive instructions.

Price: Only £35

Battery Backup fitted **£39**

Battery Backup only **£3**

16K Sideways RAM **£8**

- Sideways RAM Utilities Disc for Solderless ROM Board. Includes the options to load and save ROM Images and the facility to use Sideways RAM as Printer Buffer.

Only: £8

Connecting Leads

(All ready made and tested)

CASSETTE LEADS 7 pin DIN Plug to 3 pin DIN Plug + 1 Jack Plug	**£2.50**
to 7 pin DIN Plug	**£3.00**
to 3 Jack Plugs	**£2.50**
6 pin DIN to 6 pin DIN Plug (RGB)	**£3.00**

Disc Drive Power Leads

Supply from BBC power supply to standard Disc Drive Connection: Single **£3.00;** Dual **£3.75**

Disc Drive Interface Leads

BBC to Disc Drives Ribbon Cable
Single **£4** Twin **£6**

Miscellaneous Connectors

	Plugs	Sockets
RGB (6 PIN DIN)	**50p**	**75p**
RS423 (5 pin Domino)	**70p**	**80p**
Cassette (7 pin DIN)	**40p**	**95p**
ECONET (5 pin DIN)	**35p**	**50p**
Paddles (15 pin 'D')	**150p**	**250p**
Disc Drive Plug 4 way	**100p**	–
6 way Power Connector	**120p**	**150p**

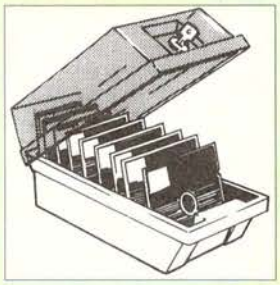
Watford DATA DUCK

Convert two single Disc Drives into one Dual Drive with this simple external unit (Suitable for Disc Drives with PSU. For Disc Drives without PSU, you will also require Watford Power Duck, see below).

£14

Watford POWER DUCK **£8**

Antistatic Lockable Disc Storage Units



- **M35** – holds up to 50 5.25" discs **£4.95**
- **M85** – holds up to 95 5.25" discs **£6.95**
- **M25*** – holds up to 25 3.5" discs **£4.95**
- **M50** – holds 50 3.5" discs **£6.50**
- **M100** – holds 100 3.5" discs **£6.99**
- **M10** – holds 8 of No. 10 Data Cartridges **£15**

* Not lockable

Disc Plonker Rack

When using ones micro, there is a tendency to have more than one Disc on the desk. This exposes them to the hazards of fingerprints, scratches, dust, coffee and an untidy desk. Why not protect your valuable data from all these hazards with the help of our extremely handy and low cost DISC PLONKER RACK. Holds up to eight 5.25" discs.

Protection at Only: **£2**

3M – Diskettes

Lifetime warranty on 3M Discs

- *10 x 5.25" S/S D/D 40T (744)* **£5**
- *10 x 5.25" D/S D/D 40T (745)* **£5**
- *10 x 5.25" S/S D/D 80 Track (746)* **£7**
- *10 x 5.25" D/S D/D 80 Track (747)* **£7**
- *10 x 5.25" 1.6M D/S D/D High Density for IBM XT and AT* **£8**
- *10 x 3.5" S/S D/D 40/80 Track* **£6**
- *10 x 3.5" D/S D/D 40/80 Track* **£6**
- *10 x 3.5" Double Sided High Density* **£11**

Top Quality Diskettes

Watford's life time guaranteed disc are supplied complete with self stick labels & plastic library case.

- *10 x **M3** 3.5" D/S D/D 80 Track* **£6**
- *10 x **M9** 3.5" D/S High Density* **£10**
- *10 x **M4** 5.25" S/S D/D 40 Track* **£5**
- *10 x **M5** 5.25" D/S D/D 40 Track* **£5**
- *10 x **M7** 5.25" D/S D/D 80 Track* **£6**
- *10 x **M8** 5.25" D/S H/D Hi-Density* **£9**
- ***M2** 3" Double Sided* **£2.50 each**

Special Bulk Offer Discs

(Lifetime warranty on Discs)

BULK PACK DISCS in lots of 100

Type	S/S 40T	D/S 40T	D/S 80T
• Without Sleeves 5.25"	£25	£30	£35
• With Sleeves 5.25"	£28	£33	£38
• 3.5" D/S D/D	–	£44	£78

3.5" Disc Drive

These top quality 3.5" Double sided, 80 track, are attractively finished in BBC beige. They are supplied complete with all cables and a Utilities Disc.

Type	Description	
	Disc Drive without PSU	
• **CLS35:**	Single Disc Drive, 400K	**£59**
• **CLD35:**	Twin Disc Drives, 800K	**£109**
	Disc Drive with PSU	
• **CS35:**	Single Disc Drive, 400K	**£82**
• **CD35:**	Twin Disc Drives, 800K	**£126**

(P.S. CS35 is supplied in a twin case with a blanking plate to enable easy expansion to a dual drive at a later stage)

Disc Drives in Monitor Stand

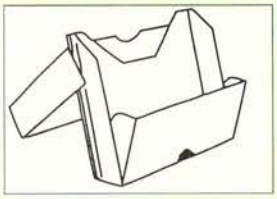
• **CDPM 800S** – Twin 5.25", 800K Double sided 40-80 track switchable disc drives mounted in an attractively finished Beige colour plinth for the BBC B & Master 128K micros. Supplied complete with integral power supply, cables and Utilities disc. The mains switch with neon On/Off light indicator, and the two 40/80 track switches are mounted on the front panel for ease of use.

£165

• **DP35 800** – Same as above except, one disc drive is a 5.25" and the other is 3.5".

£154

Plastic Library Cases



DLC1 – Holds 5 x 3.5" Discs. **£1.50**
DLC2 – Holds 10 x 3.5" Discs. **£1.90**
DLC3 – Holds 5 x 5.25" Discs. **£1.60**
DLC4 – Holds 10 x 5.25" Discs. **£2.00**

Disc Albums

Attractively finished in leather-look PVC Vinyl

DW1 – Holds 6 x 3.5" Discs **£2.50**
DW2 – Holds 6 x 5.25" Discs **£3.00**
DW3 – Holds 20 x 5.25" Discs **£3.50**
DW4 – Holds 40 x 3.5" Discs or 5.25" Discs **£4.50**

Floppy Head Cleaner Kit

The heads in floppy drives are precision made and very sensitive to dirt. The use of Cleaner Kit is a sensible precaution against losing valuable data. It is recommended to clean the drive head once a week. it is very simple to use. Available in 3.5" & 5.25", please specify.

Price £4

Acorn & Watford DFSs

- Watford sophisticated DFS ROM **£16.00**
- Watford DFS Kit complete **£49.00**
- DFS Manual (comprehensive) **£6.95**
- Acorn DNFS ROM **£17.00**
- Acorn ADFS ROM only **£25.00**
- Acorn 1772 DFS ROM Kit **£49.00**
- Acorn DFS Kit complete **£48**

Watford's Mkll 1772

Single/Double Density DFS

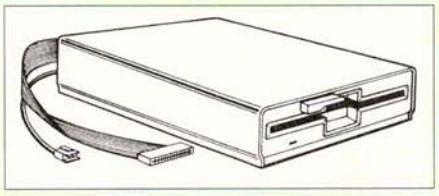
Many of our customers have wanted to use our superior DDFS and Acorn ADFS together. Now our Mk II DDFS Board with its 1772 Disc Controller, has been adapted to allow the use of Acorn ADFS as well. It also has all the commands of the Acorn's 1772 DFS, plus many more added features.

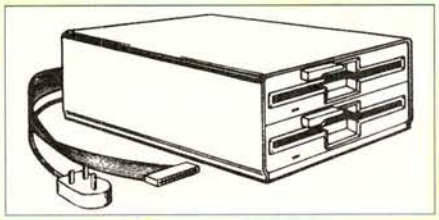
- Complete Kit Special Price **£44**
- DDFS Manual (No VAT) **£6.95**
- We will exchange your existing DFS Kit for our sophisticated DDFS for only **£26**

Quality Disc Drives from Watford

All our Disc Drives are Double Sided and will operate in both Single and Double Density modes. All 5.25" Disc Drives are 40/80 track switchable. For ease of use, the switches are front mounted. Follow the trend with a Watford plinth. (Turn to the 6th page of our advert for the Plinths).
P.S. All our 5.25" Disc Drives with PSU are compatible with the Compact Micro. All you require is our special Compact Disc Drive cables designed by us.

"Test Bureau Approved for Use in Education"





Our Disc Drives conform to BS415

Type	Description	
	Disc Drive without PSU	
• **CLS400S:**	Single, 40/80 track 400K Double sided Drive	**£70**
• **CLD800S:**	Twin, 40/80 track, 800K Double sided Drives	**£138**
	Disc Drive with PSU	
• **CS400S:**	Single, 40/80 track, 400K Double sided Drive	**£80**
• **CD800S:**	Twin, 40/80 track, 800K Double sided Drives	**£149**

Special Cable to connect both 3.5" and 5.25" Disc Drives simultaneously to the BBC Compact £13

Continued→ → → → → → → → →

Computer Concept's ROMS

Inter BASE	£49
Inter CHART	£25
Inter SHEET	£37
Inter WORD	£36
Mega-3 ROM	£76
Spell Master	£42

Wordwise plus

£40

We are giving away absolutely **FREE,** the superb Word-Aid ROM worth £24, with every WORDWISE PLUS package bought from us.

Word-Aid

This advance utilities ROM extends the power of your Wordwise plus ROM.

- Alphabetical sorting of names and addresses.
- Text transfer options.
- Chapter marker.
- Epson printer codes function key option.
- Search and display in preview mode.
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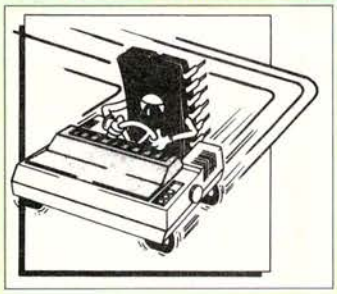

View is a powerful word processor, but it seriously lacks in terms of printer driver support. With the View Printer Driver ROM, the View users will find themselves in the realms of advanced word processing.

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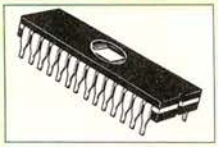

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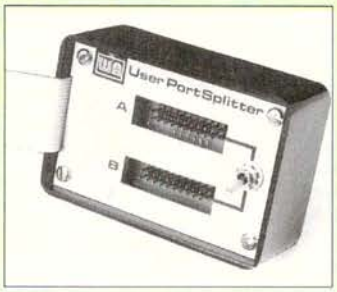

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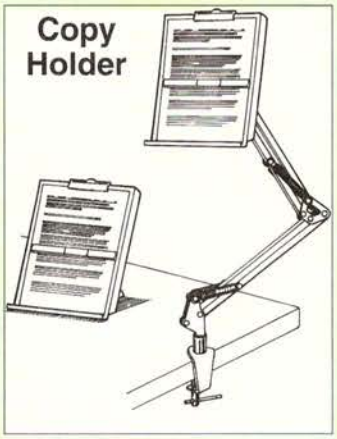

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It is possible to gain a full understanding of the mouse from this manual. For those not interested in exactly how the mouse functions, complete example programs are also included.

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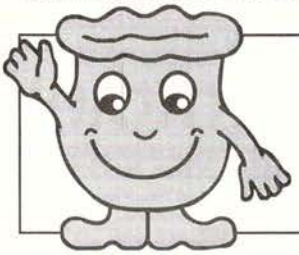

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Mapping out the pixels

Over the next two months Martin Dawe presents two powerful utilities for handling 8-bit BBC Micro screens

NO one could have failed to notice that the 32-bit Acorn machines have very powerful facilities for manipulating graphics. Every graphics program has options devoted to distorting bit-mapped pictures, but no one ever considers that the 8-bit BBC Micro can do it too.

Bearing in mind the more limited memory capacity, there are two programs: The shape designer is used to produce the form into which a graphic image will be flowed, and the Pixel Mapper itself takes the original saved screen, the shape file and creates the distorted image.

This month we're looking at the Shaper. This is a very much simplified version of the 32-bit application !Draw, which means it is object-oriented, and results in much smaller files than you would get if it were pixel-based. And of course it's much more versatile.

When Shaper is run you are given the option of using a grid and altering its size. Pressing Return for each of the options will set up a screen with a 16 by 16 pixel grid. Four dots in the corners of the screen are reference points to the corners of the final image.

You can display three basic shapes: Triangles, rectangles and many-sided polygons. What you do is create a set of shapes on the screen using the drawing facilities, and you can choose whether these are filled in foreground or background colours.

The shape is saved and then the second program combines this with the source picture and produces the final distorted shape, which is then saved.

The Shaper does not have extensive editing facilities as it is assumed that any shapes you produce will be very simple, so redrawing them is a reasonable option. The *Barbarian with the hole* design took a couple of goes before the final result was satisfactory.

The polygon feature produces very good circles so an image in a bubble is very simple to produce with just one object. Unlike most – if not all – programs for the 32-bit machines, this system can handle the situation where the image is broken into various pieces.

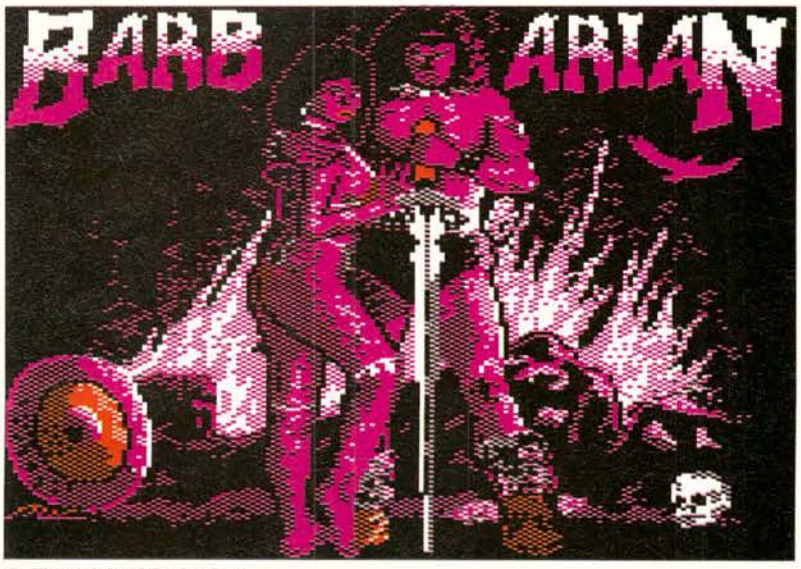
Due to memory constraints the program may not work on a standard BBC B if the PAGE setting is higher than &1900. But it works perfectly on the 32-bit machines when using the !65Host BBC emulator – create a ram disk and load all files into it, enter the emulator and type *Dir ram:$.

All the programs for both the Shaper and the Pixel mapper will be on both this and next month's subscription disk for both the 8-bit and 32-bit Acorn machines.

● *Next month we'll look at the the Pixel Mapper's operation and provide its program.*

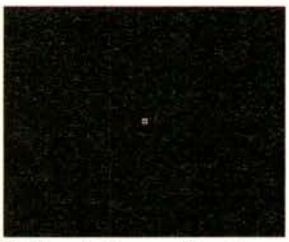
The Shaper controls

Q	Quit the program
f0	Save the shape file
L	Display the number of objects left
O	Return cross to origin
G	Lock cross to grid
N	Unlock cross from grid
F	Fill with foreground colour
B	Fill with background colour (erase)
T	Make a triangle
R	Make a rectangle
C	Make an n-sided polygon (circle)
Space	Fix corner of object
Arrow keys	Move cross around
+Shift	Move cross faster
+Control	Move cross faster still

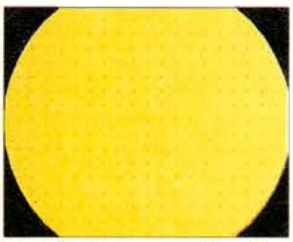


The Barbarian picture is copyright Superior Software

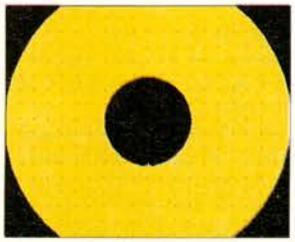
● *The original Barbarian*



● *The starting position for Shaper*



● *A circular area to draw the picture on to...*



● *...and a bit missing from the middle...*

● *...and finally, the Barbarian with the hole*

This program and others mentioned in this issue are available on the subscription disk.

```
   10 REM BBC Pixel Mapper Shape Creator
   20 REM by Martin Dawe
   30 REM (c) Acorn Computing
   40 :
   50 MODE0
   60 IF PAGE>&1900 THEN PAGE=&1900:CHAI
N"SHAPES"
   70 *FX4,1
   80 VDU23,43,54,119,119,8,119,119,54,0
   90 max%=15
  100 DIMsx%(max%),sy%(max%),fx%(max%),f
y%(max%),xx%(max%),xy%(max%),type%(max%)
  110 DIMcircx(11),circy(11)
  120 FOR c%=0 TO 11
  130 circx(c%)=COS(((c%+1)/6)*PI)
  140 circy(c%)=SIN(((c%+1)/6)*PI)
  150 NEXT
  160 col%=2:num%=-1:shape%=0:lock%=FALS
E
  170 INPUT"Grid size in pixels (default
- 16) ";spc%
  180 IF spc%=0 spc%=16
  190 spc%=spc%*4
  200 INPUT'"Show grid";yn$
  210 MODE1
  220 IF INSTR("Yy",LEFT$(yn$,1)) show%=
TRUE ELSE show%=FALSE
  230 x%=640:y%=512
  240 ONERROR IF ERR=17 PROCrestore ELSE
 REPORT:PRINT" at line ";ERL:END
  250 VDU5
  260 IF show% PROCgrid
  270 GCOL0,3
  280 PLOT69,0,0:PLOT69,1279,0:PLOT69,0,
1023:PLOT69,1279,1023
  290 GCOL3,3
  300 PROCcross
  310 REPEAT
  320 ox%=x%:oy%=y%
  330 oshape%=shape%
  340 draw%=FALSE
  350 IF INKEY-17 PROCquit
  360 IF INKEY-33 PROCsave
  370 IF INKEY-87 PROCnleft
  380 IF INKEY-84 x%=spc%*(x% DIV spc%):
y%=spc%*(y% DIV spc%):stp%=spc%:lock%=TR
UE:draw%=TRUE
  390 IF INKEY-86 lock%=FALSE
  400 IF INKEY-1 AND NOTlock% stp%=32 EL
SEIF INKEY-2 AND NOTlock% stp%=96 ELSE I
F NOTlock% stp%=4
  410 IF INKEY-99 IF shape% PROCshape2
  420 IF INKEY-101 col%=0:PROCforeback
  430 IF INKEY-68 col%=2:PROCforeback
  440 IF INKEY-55 x%=640:y%=512:draw%=TR
UE:IF lock% x%=spc%*(x% DIV spc%):y%=spc
%*(y% DIV spc%)
  450 IF INKEY-36 shape%=1:PROCshape1
  460 IF INKEY-52 shape%=3:PROCshape1
  470 IF INKEY-83 shape%=4:PROCshape1
  480 IF INKEY-122 x%=x%+stp%:draw%=TRUE
  490 IF INKEY-26 x%=x%-stp%:draw%=TRUE
  500 IF INKEY-58 y%=y%+stp%:draw%=TRUE
  510 IF INKEY-42 y%=y%-stp%:draw%=TRUE
  520 IF draw% PROCredraw
  530 UNTIL 0
  540 DEFPROCredraw
  550 MOVEox%-16,oy%+12:VDU43
  560 PROCcross
  570 IF shape% PROCdrawsh
  580 ENDPROC
  590 DEFPROCshape1
  600 IF num%=max% VDU7:shape%=0:ENDPROC
  610 IF oshape% MOVEsx%(num%),sy%(num%)
 ELSE num%=num%+1
  620 IF oshape%=1 DRAWx%,y%
  630 IF oshape%=2 DRAWx%,y%:DRAWxx%(num
%),xy%(num%):DRAWsx%(num%),sy%(num%):PLO
T69,xx%(num%),xy%(num%)
  640 IF oshape%=3 DRAWsx%(num%),y%:DRAW
x%,y%:DRAWx%,sy%(num%):DRAWsx%(num%),sy%
(num%)
  650 IF oshape%=4 PROCcircoutl(0)
  660 sx%(num%)=x%:sy%(num%)=y%
  670 IF shape%=1 PLOT69,x%,y%
  680 ENDPROC
  690 DEFPROCshape2
  700 IF shape%=1 shape%=2:xx%(num%)=x%:
xy%(num%)=y%:MOVEsx%(num%),sy%(num%):DRA
Wx%,y%:PROCwait(50):ENDPROC
  710 fx%(num%)=x%:fy%(num%)=y%:type%(nu
m%)=shape%
  720 IF col%=0 type%(num%)=type%(num%)+
128
  730 PROCcross
  740 GCOL0,col%
  750 IF shape%=2 MOVExx%(num%),xy%(num%
):DRAWsx%(num%),sy%(num%):DRAWx%,y%:DRAW
xx%(num%),xy%(num%):MOVEsx%(num%),sy%(nu
m%):MOVExx%(num%),xy%(num%):PLOT85,x%,y%
  760 IF shape%=3 MOVEsx%(num%),sy%(num%
):MOVEsx%(num%),y%:PLOT85,x%,sy%(num%):M
OVEsx%(num%),y%:MOVEx%,y%:PLOT85,x%,sy%(
num%)
  770 IF shape%=4 PROCcircfill
  780 IF show% PROCgrid
  790 GCOL3,3:PROCcross
  800 shape%=0
  810 ENDPROC
  820 DEFPROCdrawsh
  830 MOVEsx%(num%),sy%(num%)
  840 IF shape%=1 DRAWox%,oy%:MOVEsx%(nu
m%),sy%(num%):DRAWx%,y%
  850 IF shape%=2 DRAWox%,oy%:MOVExx%(nu
m%),xy%(num%):DRAWox%,oy%:MOVEsx%(num%),
sy%(num%):DRAWx%,y%:MOVExx%(num%),xy%(nu
m%):DRAWx%,y%
  860 IF shape%=3 DRAWsx%(num%),oy%:DRAW
ox%,oy%:DRAWox%,sy%(num%):DRAWsx%(num%),
sy%(num%):DRAWsx%(num%),y%:DRAWx%,y%:DRA
Wx%,sy%(num%):DRAWsx%(num%),sy%(num%)
  870 IF shape%=4 PROCcircoutl(1)
  880 ENDPROC
  890 DEFPROCwait(t)
  900 T=TIME
  910 REPEAT UNTIL TIME>T+t
  920 ENDPROC
  930 DEFPROCforeback
  940 PROCcross
  950 IF col% VDU23,43,54,119,119,8,119,
119,54,0 ELSE VDU23,43,8,8,8,119,8,8,8,0
  960 PROCcross
  970 ENDPROC
  980 DEFPROCsave
  990 IF (shape% AND num%=0) OR num%=-1
VDU7:ENDPROC
 1000 IF shape% shape%=0:num%=num%-1
 1010 VDU4
 1020 *FX21
 1030 INPUTTAB(0,0)"Filename to save";fi
le$
 1040 f%=OPENOUT(file$)
 1050 PRINT'"Saving...";
 1060 PRINT#f%,num%
 1070 FOR data%=0 TO num%
 1080 PRINT#f%,sx%(data%),sy%(data%),fx%
(data%),fy%(data%),xx%(data%),xy%(data%)
,type%(data%)
 1090 NEXT
 1100 CLOSE#f%
 1110 PRINT'"Saved"
 1120 INPUT'"Create another shape file";
yn$
 1130 IF INSTR("Yy",LEFT$(yn$,1)) RUN
 1140 *FX4
 1150 END
 1160 DEFPROCcircoutl(func%)
 1170 ex%=x%:ey%=y%
 1180 FORc%=0 TO func%
 1190 mult=SQR((ex%-sx%(num%))^2+(ey%-sy
%(num%))^2)
 1200 FORdot%=0 TO11
 1210 PLOT69,sx%(num%)+mult*circx(dot%),
sy%(num%)+mult*circy(dot%)
 1220 NEXT
 1230 ex%=ox%:ey%=oy%
 1240 NEXT
 1250 ENDPROC
 1260 DEFPROCcircfill
 1270 *FX21
 1280 GCOL3,3
```

```
 1290 MOVE80,900:INPUT"NUMBER OF SIDES "
;cstep
 1300 MOVE80,900:PRINT"NUMBER OF SIDES ?
";cstep
 1310 xx%(num%)=cstep
 1320 PROCcircoutl(0)
 1330 GCOL0,col%
 1340 PROCcircle(sx%(num%),sy%(num%),x%,
y%,cstep)
 1350 GCOL3,3
 1360 ENDPROC
 1370 DEFPROCcircle(sx%,sy%,fx%,fy%,cste
p)
 1380 cstep=2*PI/cstep
 1390 mult=SQR((fx%-sx%)^2+(fy%-sy%)^2)
 1400 FORang=0 TO 2*PI STEP cstep
 1410 MOVEsx%,sy%:MOVEsx%+mult*COS(ang),
sy%+mult*SIN(ang)
 1420 PLOT85,sx%+mult*COS(ang+cstep),sy%
+mult*SIN(ang+cstep)
 1430 NEXT
 1440 ENDPROC
 1450 DEFPROCnleft
 1460 MOVE80,900:PRINTmax%-1-num%;" SHAP
ES ARE LEFT"
 1470 *FX21
 1480 A=GET
 1490 MOVE80,900:PRINTmax%-1-num%;" SHAP
ES ARE LEFT"
 1500 ENDPROC
 1510 DEFPROCgrid
 1520 GCOL0,1
 1530 FORh%=0 TO 1279 STEP spc%
 1540 FORv%=0 TO 1024 STEP spc%
 1550 PLOT 69,h%,v%
 1560 NEXT
 1570 NEXT
 1580 GCOL3,3
 1590 ENDPROC
 1600 DEFPROCrestore
 1610 CLS
 1620 IF shape% shape%=0:num%=num%-1
 1630 IF num%=-1 ENDPROC
 1640 FOR n%=0 TO num%
 1650 IF type%(n%)AND128 GCOL0,0 ELSE GC
OL0,2
 1660 shape%=type%(n%)AND127
 1670 IF shape%=2 MOVEsx%(n%),sy%(n%):MO
VExx%(n%),xy%(n%):PLOT85,fx%(n%),fy%(n%)
 1680 IF shape%=3 MOVEsx%(n%),sy%(n%):MO
VEsx%(n%),fy%(n%):PLOT85,fx%(n%),sy%(n%)
:MOVEsx%(n%),fy%(n%):MOVEfx%(n%),fy%(n%)
:PLOT85,fx%(n%),sy%(n%)
 1690 IF shape%=4 PROCcircle(sx%(n%),sy%
(n%),fx%(n%),fy%(n%),xx%(n%))
 1700 NEXT
 1710 shape%=0
 1720 ENDPROC
 1730 DEFPROCquit
 1740 *FX21
 1750 MOVE80,900
 1760 INPUT"Really QUIT";yn$
 1770 IF INSTR("Yy",LEFT$(yn$,1))=0 MOVE
80,900:PRINT"Really QUIT?";yn$:ENDPROC
 1780 VDU4
 1790 *FX4
 1800 CLS
 1810 END
 1820 DEFPROCcross
 1830 MOVEx%-16,y%+12
 1840 VDU43
 1850 ENDPROC
```

GET IT RIGHT

```
  10 =    0 0      280 = 4E1E 6      550 = CBA8 6      820 = ED1C F     1090 = 2C83 4     1360 = ED0F 5     1630 = 116C 2
  20 =    0 0      290 = 7A3D B      560 = E64B 0      830 = A3CB 9     1100 = 51A9 0     1370 = A00C C     1640 = 9835 E
  30 =    0 0      300 = E64B D      570 = 12A5 8      840 = A7EC 9     1110 = 2B82 4     1380 = 2975 E     1650 = 28F1 C
  40 = 9719 9      310 = BFBA 5      580 = ED0F 7      850 = 6E6E 0     1120 = CEFA C     1390 = 8C30 5     1660 = 95CA B
  50 = FA1B F      320 = D10F B      590 = 9AB4 5      860 = 4718 8     1130 = CF6B E     1400 = B4DC 0     1670 = 8E3D 9
  60 = 484D 8      330 = 2AD8 9      600 = 21F6 D      870 =  A91 C     1140 =  129 5     1410 = BFD9 6     1680 = 1546 8
  70 = E383 0      340 = 87A3 5      610 = 54D3 E      880 = ED0F D     1150 = FD2E 0     1420 = F088 F     1690 = 4AD7 2
  80 = 98E7 2      350 = 6BBA F      620 = FECE 9      890 = CF85 4     1160 = 7B60 3     1430 = 2C83 5     1700 = 2C83 A
  90 =   AE D      360 = 464C 7      630 = 6C3E C      900 = 625F 5     1170 = D691 3     1440 = ED0F 5     1710 = 92CB E
 100 = 9F00 2      370 =  201 0      640 = 6509 4      910 = 8C3E 5     1180 = E610 2     1450 = 9E08 B     1720 = ED0F 3
 110 = B991 C      380 = AE57 C      650 = EC31 3      920 = ED0F 9     1190 = 25A0 A     1460 = 47A8 2     1730 = 19BA 2
 120 = B6F8 6      390 = 9048 9      660 = 194A B      930 =  30F D     1200 = 2C7B E     1470 = B5F5 E     1740 = B5F5 F
 130 = 5A64 0      400 = 974D A      670 = 7DFA 8      940 = E64B E     1210 =  AFA 7     1480 = BC1B F     1750 = 7426 C
 140 = E3A8 C      410 = 6D8D E      680 = ED0F 6      950 = 5276 D     1220 = 2C83 5     1490 = 47A8 4     1760 = 1124 D
 150 = 2C83 8      420 = 9DC1 8      690 = AAD7 1      960 = E64B A     1230 = 4735 F     1500 = ED0F 2     1770 = 96B1 7
 160 = BFA7 0      430 = C68E 0      700 = BC2E 9      970 = ED0F C     1240 = 2C83 6     1510 = B225 2     1780 = 765B 6
 170 = F190 7      440 = 65CD 3      710 =  83D D      980 = 7A2C 1     1250 = ED0F 3     1520 =  32F D     1790 =  129 7
 180 = 1690 C      450 = B167 4      720 = C635 6      990 = 71E4 4     1260 = 2498 F     1530 = B2A6 3     1800 = 7A16 4
 190 = EFE1 8      460 = 63A7 6      730 = E64B 9     1000 = D41F 6     1270 = B5F5 B     1540 = 4EF0 8     1810 = FD2E 3
 200 = 19A0 7      470 = 2403 0      740 = 5A01 8     1010 = 765B 8     1280 = 7A3D A     1550 = A391 F     1820 = 4D2F 6
 210 = EA3A 4      480 = 232C 7      750 = F209 0     1020 = B5F5 1     1290 = C068 7     1560 = 2C83 9     1830 = BBAC 1
 220 = C5BE A      490 = CF5F F      760 = BB0C D     1030 = 3D8D E     1300 = E05E B     1570 = 2C83 D     1840 = 4361 5
 230 = B954 A      500 = 176A 6      770 = 653A A     1040 = D1FF D     1310 = ECA6 B     1580 = 7A3D A     1850 = ED0F 4
 240 = 5A7B 7      510 = 9B28 F      780 = C96A 7     1050 = 85A8 2     1320 = DA71 7     1590 = ED0F 5
 250 = 667A 2      520 =   D1 C      790 = 5A68 A     1060 = 6A3F 9     1330 = 5A01 6     1600 = 49A4 2
 260 = C96A 1      530 = 91B6 F      800 = 92CB A     1070 = 3765 F     1340 = 708F C     1610 = 7A16 C
 270 = 236D 2      540 = C88D F      810 = ED0F 0     1080 = 1A0F 3     1350 = 7A3D B     1620 = D41F 5
```

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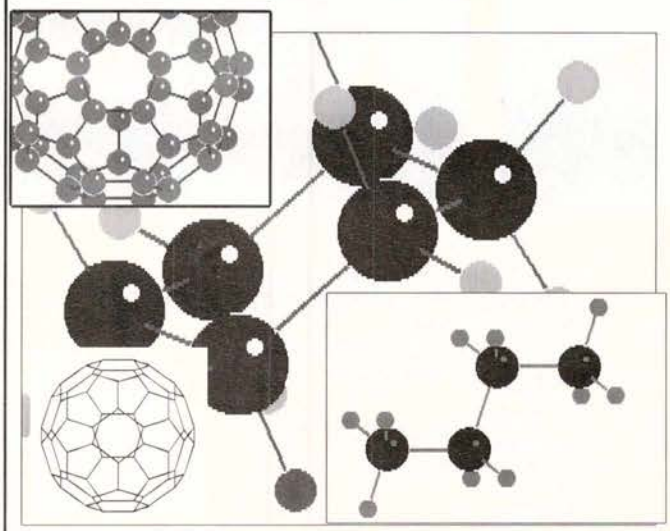

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Mad mapping: Beginners start here

I PROMISED a lesson in mapping last month for those readers who have joined us in the last three or so years, and who are looking for a methodical way of knowing where you are in an adventure.

I can't provide an exhaustive example here – if you want something like that, then order my book **The Adventure Gamer's Manual** – through the magazine.

What I'm going to do now is to offer general advice for those benighted creatures like myself who have the spatial awareness of a bull in a china shop.

It was something that almost made me give up adventure games as a dead loss – so you can see how serious it was.

Rotten at geography, incapable of memorising maps of the conventional kind, I was desperate when I realised that, if I couldn't keep track of where I was in an adventure game, I had no real hope of ever being successful.

This is where my training at university came to the rescue: I figured out a method which I christened *Logical Mapping* and it has pretty well stood the test of time since those very early days some 10 years ago.

Here's how you go about it: All adventure games employ the four main compass directions, North, East, South and West. Most also use Up and Down, and many (save the very earliest ones) include the diagonal directions (Northeast, Southeast, Southwest and Northwest) as well.

That scrap of information, plus the ability to count, is all you need: It really is that simple – well, almost, anyway.

Each location is given a number, and you also should include a brief description, and be prepared to indicate the results of a move.

This means your very first notes should look something like the following example taken from the Level 9 classic **The Price of Magik**. As an aside, I shall be starting to

➤

Dark and dirty deeds

LAST month I left readers of my Corruption comments with the admonition to check your inventory as soon as possible, and not to forget to make regular saves. Now we are going deeper into the mire.

It's time to explore that fragrant location the washroom in order to uncover another vital piece of evidence – and you must do it before about 9.30 am.

You actually need to go into the lavatory cubicle and look inside the cistern, where you'll find a plastic bag containing a white powder.

Tasting is optional, but leave it there and make sure that you are somewhere else by 9.35 am because David pops in for a ponder just afterwards. If you care to return, you'll find that David has grabbed the snorts and scuttled elsewhere by about 9.45 am

Try next to be in Theresa's office by around 10.00 am. She will be absent, but a letter will be present: It's one from your wife, Jenny to someone called Ticklepot.

Since Theresa is David's secretary, I'll leave you to draw your own conclusions. If you leave things much later it will have disappeared, but it's not exactly vital – it just helps to add to your feeling of being neck deep in manure.

Your next job involves a Volvo: Go to the basement garage, enter your own car (the BMW) using the key and get the screwdriver from the glove compartment. The screwdriver has two uses, both burglarious. Make sure your car is locked before turning your attention to the Volvo – failure to do so will end in tears.

Break the Volvo's window and grab that loose leaf folder, then run back to Margaret's office in order to be there by no later than 11.20 am.

You need to pick up the phone and repeat the command listen until you overhear a conversation between Bill Hughes and David Rogers at 11.25.

This will inform you even more clearly that you are to be the victim of a frame-up. They aim to get you for insider dealing in the shares of Scott Electronics.

You can kill two birds with one stone now. You must go to Theresa's office next – which she will leave at 12.00. Once she has gone, open the drawer in her desk and take the brass key.

Pick up the phone and listen until you intercept a phone call between David and the villain Charpontier which takes place at 12.10. You will hear your own death sentence.

Use the brass key to gain access to David's office and take the cassette. Leave and lock the door but hang on to the key – you'll be back.

Improve the shining hour by going back to your BMW and playing the tape: It will be a revelation, I assure you. Now pop everything you have into the briefcase and lock it in the BMW, because you are going to land up in hospital very shortly, and you need to be carrying nothing: Guess where I lost the car key.

That needs to be dropped at a location you can remember – Matthew Jacques suggests the pavement area near the Monaco restaurant.

You have a choice now as to how you get hospitalised: Aren't you lucky? Both methods involve hanging about outside the Monaco restaurant until your wife is dropped off at 1.56 by someone driving a Porsche – it couldn't be David, could it?

Although you had a lunch date, on no account should you join her, instead you should do one of two things.

Method one is simply to lurk around the block until Jenny leaves the restaurant at 2.27, making sure that you are just outside it at that point. She will murmur sweet nothings at you and leap into a taxi.

Moments later you will be shoved under a bus. Method two involves more hanging about: Pop into the park and annoy the tramp by following him, examining him – and you could even try kissing him, I suppose.

Anyway, eventually he leaves – at 2.28 – but be faithful to your tryst and he will return. A moment or two's exercise of patience and he will happily bash you – and Bob's your uncle.

➤

serialise the full solution to this adventure very soon.

Make sure you head every sheet of paper you use with the name of the game – that may sound very basic but imagine your frustration at knowing where you are to some extent, but not knowing which abandoned adventure the notes deal with.

So, at the top of every sheet of paper appears the name of the game, in this case The Price of Magik – or POM for short – after the first sheet.

Next you need room for the location number, a brief room description, the same for any exits mentioned, a direction and the result. So, my initial heading looked something like this:

Price of Magik			
Room description	Exits	Move	Result

I always start my moves with North, and then move round steadily clockwise until I reach Northwest before including Up and Down. On the whole, I take nothing for granted, and even if the location description includes the mention of exits I still try everywhere.

Price of Magik				
Room	Description	Exits	Move	Result
001	Winding drive	Shed	W	002
		Vine	UP	004
		Door	IN	041

On the few occasions I have become lazy I have always finished up with egg on my face. So the initial POM map looked like the table above.

Now observant readers will discover a couple of things about my adventuring technique from this description: The first is that I forgot two important directions, namely *In* and *Out*.

Secondly, I waited quite a long time before going in through the door: I have a very nasty suspicious mind where doors are concerned. Creatures tend to lurk behind them, and I don't like lurkers – I always end up dead when meeting them.

You will also notice that I went to the shed first, on the grounds that it was closest. That led me to a herb garden as well, and only after I had done everything there did I consider climbing up the vine.

The fact is that there was an awful lot to do and learn in those first few locations as I discovered various items of equipment and tested out what they could be used for.

Each time I came to a new location I would try out all 12 directions in turn, and then make a note of where the exits I found led to together with details of the location description and anything that I discovered there.

This method may take a little while to learn, but if you can't visualise maps, it may well pay you dividends – and if you have trouble with maps that look like boxes immersed in manic spaghetti, this may be the answer to your problems.

Elite Affairs

A young lad from Oggyland (Cornwall to the rest of you) has written in with some very basic queries on Elite, and I thought the answers – where I've got them – would be useful for beginners in just about every version of the game. So here's advice for T. J. Martin from Bude.

Getting started: It is important to get rich as fast as possible, and that means trading selectively. The game opens with you at Lave – a Rich Agricultural system. This means you can buy certain items relatively cheaply, but they will be even cheaper at a Poor Agricultural system.

Notice, too, that certain items such as Computers and Luxuries are relatively expensive – and this gives us the clue as to our best procedure.

Personally, I chose Liquor/Wines rather than Food or Textiles as a first choice – and that gave me 3 tons of them and 12 Credits left, which I spent on 3 tons of Food.

As an aside, I am dealing in ArcElite prices, but the principle is the same for every version of the game. I now needed a Rich Industrial destination if possible. The best I could find was Zaonce, an Average Industrial system which was also relatively safe for a beginner since it is a Corporate State.

I sold my cargo for Cr.124 and, before doing anything else, I topped up with fuel: You can feel so fuelish if you spend all your dosh on cargo first in the early stages of the game. I had enough money for just one ton of Computers – and not quite enough for a ton of Machinery. Destination now was Isinor, a poor Agricultural Confederacy system, which again offered relative safety.

My luck being what it is, I got jumped by pirates. Still, it meant that I arrived with a Cr.37 cash bonus, and – after a while – an escort of Vipers.

After refuelling I had Cr.179 to spend: That translated into 8 tons of booze and 1 ton of food. I now needed a Rich Industrial system. At the very limits of my range was Ensoreus, just about ideal since it was a Corporate State.

My luck held good, and I was hit by pirates once again, this time suffering a missile strike. However, the police tore up in the nick of time, and I arrived battered, with a bonus of Cr.12 and Cr.307 to spend after refuelling.

I had found my ideal exchange systems – a Poor Agricultural and Rich Industrial pair which were (relatively speaking) going to allow me to accumulate mountains of moolah.

After that, it's a question of deciding your priorities. I suggest, though, that you don't spend any money until you have got a full cargo bay of computers.

My own choice would then be as follows: Large cargo bay, Front beam laser, ECM system, Docking computer, Front military laser, Energy unit and then whatever you fancy. Once I was fully equipped – Fuel scoops last – I ceased trading and went off bounty hunting.

Finally, he asks how to find a space station quickly when you emerge from hyperspace, and what is a Dodec space station. Well, there are two shapes of space station in Elite and ArcElite: One is shaped like a cube, the other is a dodecahedron – hence the name.

As to locating the direction of the space station, that is what your long range radar is for – that's the square-shaped scanner with the dot that moves about.

On ArcElite the dot is white when you are moving towards the space station and red when you are moving away. So get the dot in the middle of the cross, make sure it's the right colour, accelerate and start jumping.

I have a tip for those early purchasers of ArcElite who might be experiencing frozen mouse problems on getting back to the Desktop: I am told this was due to a bug – not in ArcElite – but in Risc OS.

Before you load up ArcElite, press F12 and then enter Basic: Now enter the command MOUSE STEP 5,5. Return to the Desktop, load up ArcElite and Bob's your uncle.

Thanks to Paul Dean for this tip. If you upgrade to the Gold Edition of ArcElite then you won't have to perform this chore since, as soon as Hybrid became aware of the problem, they dealt with this minor irritation.

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Rom and Ram explore different ways to write on the screen

A man of

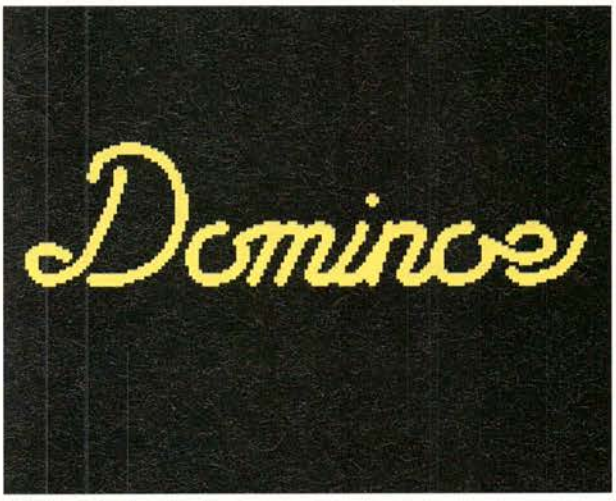
HAVING just about learned how to write his name Rom is eager to display his literary skills on the computer. "That'll impress Ram" thinks Rom, "but I'll have to write in big letters because Ram is far too mean to buy himself new glasses. He can hardly see the monitor never mind what's on it."

While both the 8-bit BBC Micro and its bigger cousins are blessed with a number of handy modes allowing various sizes of letters and numbers, it is sometimes necessary to display words a lot bigger or fancier – like headings at the start of games.

The listing *Write1* is one such introduction for the game Dominoes. This produces the word Dominoes in glorious technicolour yellow in proper joined up writing, so Rom can follow, by printing a single character lots of times.

The position of each character is dictated by the DATA which consists of offsets to where the character was last printed. Simply, the X and Y coordinates are added to or subtracted from in order to evaluate the next position to print at.

From this simple structure some rather pleasing graphics can be produced by adding another colour printed slightly to one side of the main colour. Try removing the REM from line 350 and RUN the program again.



● *Nice joined-up writing*

This time a blue border is added to the yellow which enhances the visual impact – looks nicer too. Try putting the REM back in at line 350, remove the REM from line 300 and alter line 40 to VDU19,3,3;0;

Now when you RUN the program it appears that the word is being produced by a laser. All line 300 does is move to a fixed point (640,320) and draws a line from that point to where the character that draws the letters is to be printed. If you want to know why the VDU19 at line 40 was altered to 3 from 4 try altering it back to VDU19,3,4;0; and RUN the program again.

Because GCOL3 exclusive ORs the colour to the screen any overlap of colour 1 (red) on colour 2 (yellow) produces colour 3, white by default, so when laser writing this has to be accounted for by altering colour 3 to yellow – colour 2.

You can inflict other simple changes to the program to alter the display by changing the character used to produce the letters at line 50. Try:

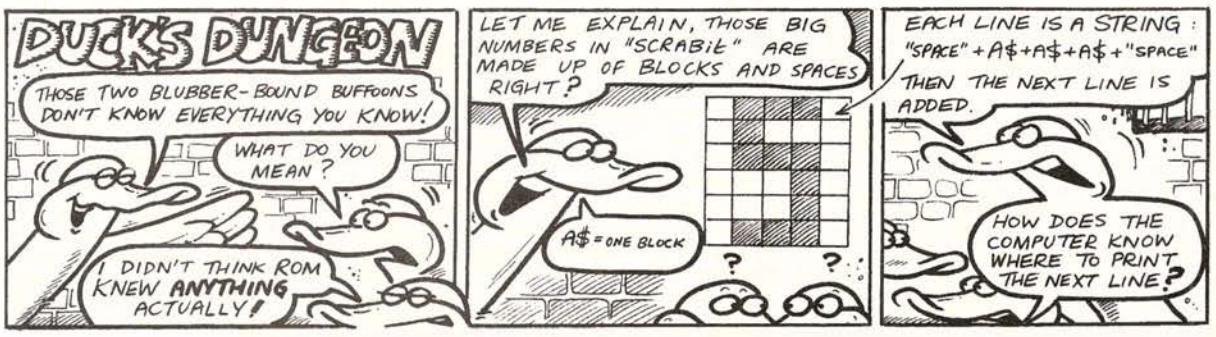
```
VDU23,255,0,0,0,1,0,0,0,0
```

or to make Ram feel sick:

```
VDU23,255,15,0,0,7,7,0,0,15
```

Never content with being able to walk Rom has to have a bash at running and is imploring Ram to make him a computer scoring display for that popular board game that rhymes with babble.

Ram agrees, as what the computer is good at is continuously updating data without recourse to more paper and sharpening of pencils, and it's usually a good deal neater. The


DUCK'S DUNGEON
THOSE TWO BLUBBER-BOUND BUFFOONS DON'T KNOW EVERYTHING YOU KNOW!
WHAT DO YOU MEAN?
I DIDN'T THINK ROM KNEW ANYTHING ACTUALLY!
LET ME EXPLAIN, THOSE BIG NUMBERS IN "SCRABBLE" ARE MADE UP OF BLOCKS AND SPACES RIGHT?
A$ = ONE BLOCK
EACH LINE IS A STRING : "SPACE" + A$ + A$ + A$ + "SPACE"
THEN THE NEXT LINE IS ADDED.
HOW DOES THE COMPUTER KNOW WHERE TO PRINT THE NEXT LINE?

letters

● *The Scrabit scoring program*

program, *SCRABit*, will display the scores for a two player game and provides a discernibly large and colourful way of keeping abreast of the leading wordsmith. When run the program asks for the two players' names and then displays player one in red and player two black.

A question mark denotes which player's turn it is so if you just want to change the awful letters you've acquired, just press Return and the question mark will flip to the other player's score box.

To add a score just type in how many points your word adds up to, press Return and watch the display count through the numbers until it has arrived at your current total.

This is, of course, unnecessary but heartwarming to watch your opponent really suffer as that seven letter triple word score word packed with Qs and Xs gradually notches up a phenomenal 169 soul-destroying points.

To the right of the two score boxes another box displays each individual word score as you go along which refreshes when/if the tally reaches the bottom of the screen.

This is a good indicator of the type of player you are – either one of those who reliably churns out plenty of 20 pointers or the obnoxious vocabulary fiend with the 70 points plus at every turn.

If you enter a score wrongly press Return until the question mark resides at the correct score box and type in a minus number. So if you type in 48 instead of 42 just enter -6 and the score will count backwards.

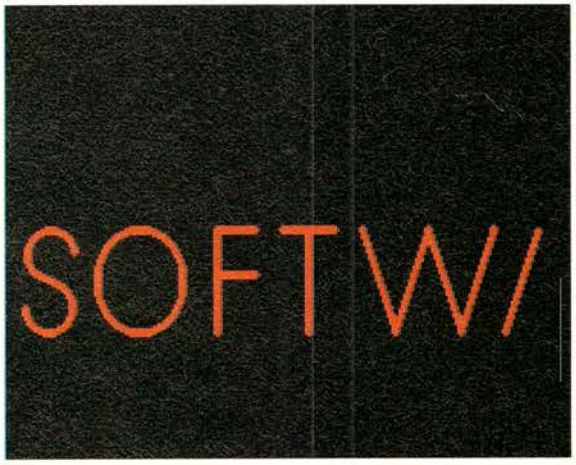
Note that the tally of scores remains unaltered, something Rom pointed out to Ram when this article was already at the printers. Now there's a paradox – triple wordscore on that X. The display is updated very quickly and convincingly as each number is printed on a text screen – that is using PRINTTAB(x,y) as opposed to a graphics screen which would need MOVEx,y:PRINT.

Each number is made from six rows and five columns and saved as a string – see the Ducks Dungeon for details. This means there is no time wasted erasing the old number from the screen as each new number completely overwrites the previous. Also the score boxes are made up of a series of reprinted little boxes.

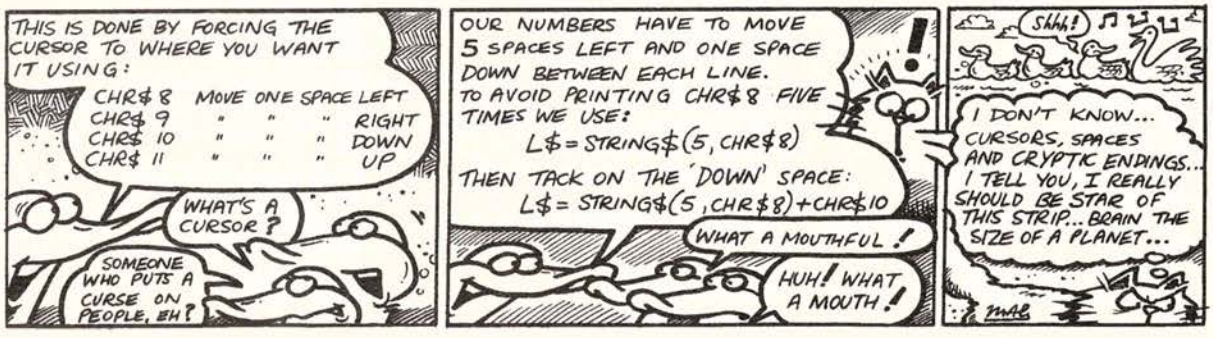
While again unnecessary and longwinded it just makes the display that little bit different and watchable while under construction. Well that's Ram's excuse anyway but it makes the display more flexible. Try adding this line:

```
135 VDU23,224,255,129,129,129,129,129,129,255
```

and RUN the program. So just by altering the user-defined character 224 you could have a different display every time.



● *Quality effects that are easy to achieve*


THIS IS DONE BY FORCING THE CURSOR TO WHERE YOU WANT IT USING:
CHR$ 8 MOVE ONE SPACE LEFT
CHR$ 9 " " " RIGHT
CHR$ 10 " " " DOWN
CHR$ 11 " " " UP
WHAT'S A CURSOR?
SOMEONE WHO PUTS A CURSE ON PEOPLE, EH?
OUR NUMBERS HAVE TO MOVE 5 SPACES LEFT AND ONE SPACE DOWN BETWEEN EACH LINE. TO AVOID PRINTING CHR$8 FIVE TIMES WE USE:
L$=STRING$(5,CHR$8)
THEN TACK ON THE 'DOWN' SPACE:
L$=STRING$(5,CHR$8)+CHR$10
WHAT A MOUTHFUL!
HUH! WHAT A MOUTH!
SHHH!
I DON'T KNOW... CURSORS, SPACES AND CRYPTIC ENDINGS... I TELL YOU, I REALLY SHOULD BE STAR OF THIS STRIP... BRAIN THE SIZE OF A PLANET...
MAR

GET IT RIGHT

```
10 =    0 0    170 = 32D7 4    330 =    0 3    490 = 148D 5    650 =    0 0    810 = DEF5 8
20 =    0 0    180 = 814A D    340 =    0 3    500 =    0 5    660 = 459C F    820 = D214 E
30 =    0 0    190 = D9F2 C    350 = 54C3 8    510 = 1237 7    670 = 79A4 9    830 = 1FA5 0
40 = EA3A A    200 = 32D7 C    360 = D1AD B    520 = 21EB E    680 = E0FC 9    840 = 9999 3
50 = 8EF3 0    210 = FD2E F    370 =    0 B    530 = 4F6E 9    690 =    0 9    850 = 1C57 7
60 = F6E9 2    220 =    0 F    380 =    0 B    540 = 4F6E 4    700 = C0A2 3    860 = CCCF 5
70 = AE16 9    230 = 99B3 2    390 = C373 2    550 =    0 4    710 = 2778 B    870 = 5F28 7
80 = 84B4 1    240 = BB60 F    400 = ABA7 2    560 = 1678 C    720 = 4C53 4    880 = 9719 0
90 = 667A 3    250 = BFBA 2    410 = ED0F 2    570 =    0 C    730 = B2EF D    890 = FF86 4
100 = 334C 1   260 = D08F 1    420 =    0 2    580 = 7C49 2    740 =    0 D    900 = A947 7
110 = D1AD 6   270 = DE81 7    430 = B25B 2    590 = 2778 C    750 = 58F4 7    910 = 5F78 2
120 =    0 6   280 = BC34 0    440 = F550 6    600 = 4C53 8    760 = 5B9D 0    920 = 9528 7
130 = 11A1 4   290 = 6287 2    450 = 59F8 A    610 =    0 8    770 =    0 0    930 = A99A F
140 =    0 4   300 = 334C 2    460 =    0 A    620 = B2EF D    780 = C15A A    940 = 59F8 4
150 = D1AD 5   310 =  A1F 3    470 = 33AD 7    630 = 4E38 D    790 =  258 E
160 = D9F2 7   320 =    0 3    480 =  570 E    640 =  829 0    800 = DA71 C
```

The other programs mentioned in this article are on the subscription disk.

```
  10 REM WRITE1
  20 REM by Mike Goldberg
  30 REM (c) Acorn Computing
  40 MODE1
  50 VDU23,1,0;0;0;0;0;
  60 VDU19,3,4;0;
  70 VDU23,255,0,0,24,60,60,24,0,0
  80 A$=CHR$255
  90 VDU5
 100 GCOL0,2
 110
 120 REM == START CO-ORDINATES
 130 SX%=352:SY%=640
 140 REM ******************
 150
 160 X%=SX%:Y%=SY%
 170 PROCwrite
 180 SX%=SX%+120:SY%=SY%-64
 190 X%=SX%:Y%=SY%
 200 PROCwrite
 210 END
 220 REM ==WRITE-PROC
 230 DEFPROCwrite
 240 MOVEX%,Y%:PRINTA$
 250 REPEAT
 260 TT%=TIME+1
 270 READx%,y%:x%=x%*4:y%=y%*4
 280 X%=X%+x%
 290 Y%=Y%+y%
 300 GCOL0,2
 310 IFx%=-40000Ry%=32G0T0350
 320 REM == LASER WRITING
 330 REM GCOL3,1:MOVE640,320:DRAWX%+28,
Y%-32
 340 REM == ORDINARY WRITING
 350 GCOL0,2:MOVEX%,Y%:PRINTA$
 360
 370 REM == TWO COLOURS
 380 REM GCOL0,3:MOVEX%+8,Y%+8:PRINTA$
 390 REPEATUNTIL TIME>TT%
 400 UNTILx%=-4000
 410 ENDPROC
 420 REM =="D"
 430 DATA0,-1,0,-1,-1,-3,-1,-3,-1,-3,-1
,-2,-1,-2,-1,-2,-1,-2,-1,-2,-1,-2,-1,-2,
-1,-1,-1,-1,-1,-1,-2,-1,-2,-1,-3,-1,-2,0
,-2,1
 440 DATA-1,1,-1,2,0,1,0,1,0,1,1,1,2,1,
1,0,1,0,1,0,2,-1,2,-1,8,-7,1,0,2,0,2,0,2
,0,1,0,3,1,3,1,2,1,2,1,1,1,1,1,1,1,1,1,1
,2,1,2,1,3,1,3,0,2,0,2,0,2,-1,3,-1,3,-2,
3,-2,2,-2,1,-2,1,-3,1,-2,0,-2,0,-3,-1,-2
,-1,-2,-1,-1,-2,-1,-3
 450 DATA-1000,0
 460 REM =="O"
 470 DATA-1,0,-3,-1,-2,-1,-1,-1,-1,-2,-
1,-2,0,-2,0,-1,1,-3,1,-1,2,-1
 480 DATA1,0,2,0,3,1,2,1,2,2
 490 DATA1,2,0,1,0,2,-1,2
 500 REM =="M" 1st leg
 510 DATA1,1,2,1,2,1,3,1
 520 DATA1,0,2,0,1,-1,-2,-2
 530 DATA-1,-2,-1,-2,-1,-2
 540 DATA-1,-2,-1,-2,-1,-2
 550 REM =="M" 2nd leg
 560 DATA11,15,1,0,2,-1,0,-2,-1,-2,-1,-
2,-1,-2,-1,-2,-1,-2,-1,-2
 570 REM =="M" 3rd leg
 580 DATA9,14,2,1
 590 DATA1,0,2,-1,0,-2,-1,-2,-1,-2,-1,-
2,-1,-2
 600 DATA-1,-2,0,-1,1,-1
 610 REM =="I"
 620 DATA2,0,1,0,2,1,2,2,2,3
 630 DATA2,3,2,3,1,3
 640 DATA3,8,-3,-8
 650 REM =="N" UP STROKE
 660 DATA-6,-15
 670 DATA2,0,1,0,2,1,2,2,2,3,2,3,2,3,1,
3
 680 DATA-1,-3,-1,-3,-1,-3,-1,-3,-1,-3
 690 REM =="N" DOWN STROKE
 700 DATA7,14,2,1,1,0,1,0
 710 DATA1,0,2,-1,0,-2,-1,-2,-1,-2,-1,-
2,-1,-2
 720 DATA-1,-2,0,-1,1,-1
 730 DATA2,0,1,0,2,1,2,2,2,3
 740 REM == 2nd "O" in DominOes
 750 DATA9,9
 760 DATA-1,0,-3,-1,-2,-1,-1,-1,-1,-2,-
1,-2,0,-2,0,-1,1,-3,1,-1,2,-1,1,0,2,0,3,
1,2,1,2,2,1,2,0,1,0,2,-1,2
 770 REM =="THE "E"
 780 DATA2,-1,2,-1,2,-1,2,-1,3,-1
 790 DATA2,0,3,1,2,1,1,1
 800 DATA0,2,-1,2,-1,1,-2,1
 810 DATA-2,0,-3,-1
 820 DATA-2,-2
 830 DATA0,-10
 840 DATA1,-1,2,-1
 850 DATA2,0,1,0,3,1,3,1,2,1
 860 DATA1,1,1,1,1,1,1,2,1,2,1,2
 870 DATA1,2,1,1
 880 :
 890 DATA1,0,1,0,3,-1,2,-2
 900 DATA1,-3,1,-3
 910 DATA0,-2,-1,-2,-3,-2
 920 DATA-2,0,-2,0
 930 DATA-2,1,-1,2
 940 DATA-1000,0
```

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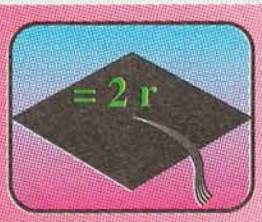

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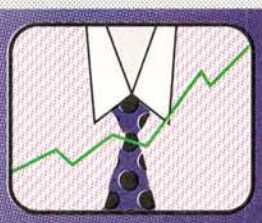

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...OR CAN THEY?
BUT HUMANS ARE TOO CLEVER – THEY CAN AVOID BECOMING EXTINCT...
...OR DISEASE?
DA-DOOM!
MAG OCT 92

Fast breeders

The CyberDoc investigates population explosions and collapses

This month's program gives a graphical indication of the way a population of any creature might vary with time. It's based on a formula called the *logistic difference equation* which I read about in a book called Chaos, by James Gleick.

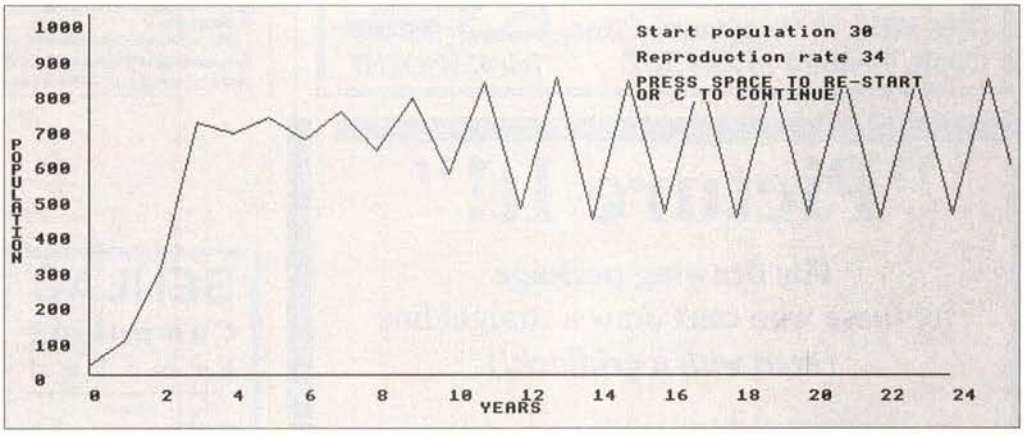
The idea is to try to represent a very complex situation with a very simple piece of mathematics. To represent problems with lack of food, fighting, predators and so on, just two pieces of information are needed.

These are the start population of the animals and the breeding rate. This really means the number of young which are born each year. In this simulation an assumption is made that more than 10 youngsters must be born annually to maintain a steady population.

The program produces a graph which shows the size of population against years passed and some very interesting results occur. You, as a good scientist, should investigate. For example, it won't surprise you that a low breeding rate is not good news for the population but what happens with a high breeding rate?

Obviously, the program does not give reasons, but you might like to think why populations can suddenly face near disaster with the vast bulk vanishing in just one year. Perhaps your thoughts might be important, because we humans are not too good at looking after our environment.

● *Next month we'll be looking at another fascinating scientific phenomenon.*



● *Fast Breeder population graph*

```
  10 REM Fast Breeder
  20 REM The CyberDoc
  30 REM (c) Acorn Computing
  40 MODE0
  50 PROCinit
  60 CLG
  70 PROCaxes
  80 PROCplot
  90 G=GET
 100 IF G=ASC"C" GOTO60
 110 IF G=32 RUN
 120 GOTO90
 130 DEFPROCinit
 140 REPEAT
 150 INPUT"Start population (2 - 1000)
",pop
 160 UNTILpop>1 AND pop<1001
 170 REPEAT
 180 P=pop/1000
 190 INPUT"Reproduction rate (0 - 40) "
,rate
 200 UNTILrate>-1 AND rate<41
 210 R=rate/10
 220 Y=0
 230 ENDPROC
 240 DEFPROCplot
 250 VDU28,50,7,78,1
 260 PRINTTAB(0,0);"Start population ";
INT(pop)
 270 PRINT'"Reproduction rate ";rate
 280 MOVE0,pop-pop/10
 290 X=0
 300 REPEAT
 310 P=P*(1-P)*R
 320 pop=P*1000
 330 X=X+46
 340 DRAWX,pop-pop/10
 350 TIME=0:REPEATUNTILTIME>10
 360 UNTILX>1200
 370 PRINT'"PRESS SPACE TO RE-START"'"O
R C TO CONTINUE"
 380 ENDPROC
 390 DEFPROCaxes
 400 VDU29,100;100;
 410 MOVE0,0
 420 VDU5
 430 FORN=0TO10
 440 MOVE-70,N*90:PRINT;N*100
 450 NEXT
 460 MOVE-100,600:PRINT"P"'"O"'"P"'"U"'
"L"'"A"'"T"'"I"'"O"'"N"
 470 FORN=0 TO (Y+24)
 480 MOVEN*46,-40:IF N MOD2=0 PRINT;N+Y
 490 NEXT
 500 Y=N
 510 MOVE500,-70:PRINT"YEARS"
 520 VDU4
 530 MOVE0,0:DRAW0,1000
 540 MOVE0,0:DRAW1100,0
 550 ENDPROC
```

GET IT RIGHT

```
  10 =    0 0
  20 =    0 0
  30 =    0 0
  40 = FA1B B
  50 = DEBB B
  60 = 6A37 F
  70 = 9F31 6
  80 = F2AD E
  90 =  EBB F
 100 = CECC F
 110 = 3232 2
 120 = 9438 0
 130 = 344C E
 140 = BFBA 2
 150 = 264B 8
 160 = F468 B
 170 = BFBA F
 180 = 41AD B
 190 = AAA8 9
 200 = 6F44 7
 210 = FFD5 C
 220 = 85C5 0
 230 = EDOF B
 240 = 185A B
 250 = 360E D
 260 = 5582 6
 270 = 425D 1
 280 = 966D 8
 290 = B2F5 3
 300 = BFBA 3
 310 = 9234 C
 320 = 2ECB F
 330 = 4949 D
 340 = CA51 6
 350 = 893A 9
 360 = B95C 5
 370 = 6768 D
 380 = EDOF 2
 390 = 75C6 4
 400 = 4565 4
 410 = 7BA5 4
 420 = 667A A
 430 = 7C06 5
 440 = 2958 E
 450 = 2C83 3
 460 = 7C12 C
 470 = AE30 7
 480 = 2A28 8
 490 = 2C83 4
 500 = 1A9C 0
 510 = F45D 2
 520 = 765B 5
 530 = C601 B
 540 = 962B B
 550 = EDOF 8
```

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Sneak Thief

Mike Cook introduces a very slow game

IT'S a long time since we presented a game here in the Body Building department so how about one that is suitable for all computers. I have called it Sneak Thief.

You play the part of a master cat burglar. No you don't go about stealing cats but you are very nimble and good at climbing. You have scaled the walls of the ferocious castle of Baron Van Ribboncable and avoided the pack of wolves he keeps as pets.

You have picked the lock into the master display room and now you are standing in front of the display cabinet that contains the skull of the last King of the Watomi tribe. The Baron stole this long ago and it is your job to restore it to its rightful owner – well, we can't have you playing the bad guy, can we?

The only thing that stands between you and the treasure is an invisible infra-red beam – if it is triggered it will bring out a whole platoon of guards. Definitely not a good idea.

Fortunately you are a keen reader of *Acorn Computing* and you know that Mike Cook has said that the best form of alarm is triggered not on absolute levels but on difference levels. This prevents the alarm being triggered by changes in ambient lighting when the sun moves round the room.

With your superior knowledge of electronics you know that if you move slowly enough you will not set off the alarm. Your task then is to remove the skull.

Well that's the set up, if you were really serious you would just turn off the computer – but this is a game remember. So to make it you first of all need a box and a skull, or some other treasure, like a small ornament, unlawfully purloined by the Baron. With this circuit you should get a beam that covers about 6 ins or 15 cm so make sure the box opening is no larger as shown in Figure I.

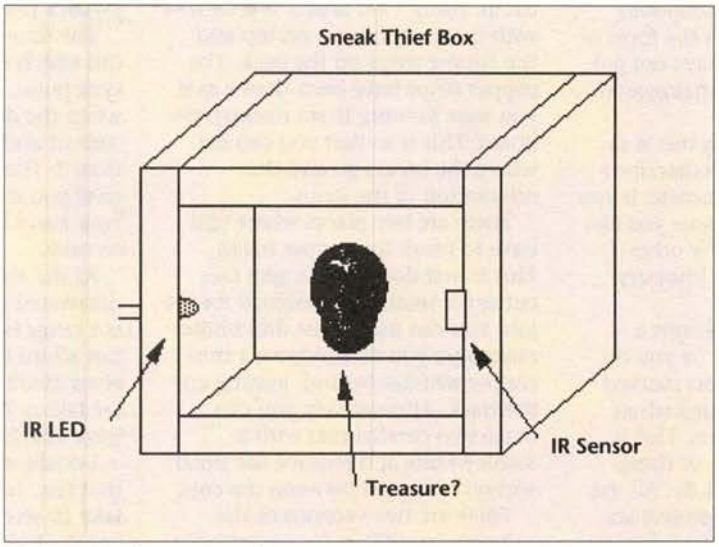
Now in one side you make a small hole and insert the infra-red LED and on the other side you stick the infra-red sensor to the inside of the box. Note that the sensitive side is the large flat one without the writing on it. Make sure that these are lined up and insert a small piece of card to shield the sensor from light from outside.

The electrical circuit is shown in Figure II. The circuit is generally similar to the infra-red remote control circuit we used in the June '92 Body Build. However, this time we do not need the chopper circuit so the beam generation part is very simple.

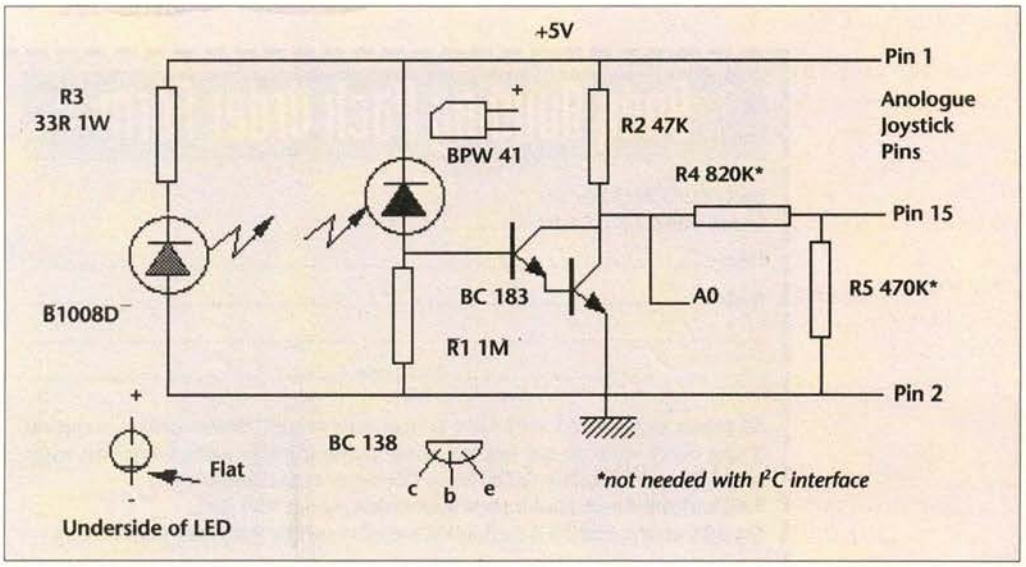
The sensor is connected to a Darlington pair amplifier and will produce an output range between 0v when the beam is not obstructed and 5v when the sensor is covered.

Now there are two ways to get this signal into your computer – the Analogue joystick port or the I²C bus. If you have an 8-bit ➤

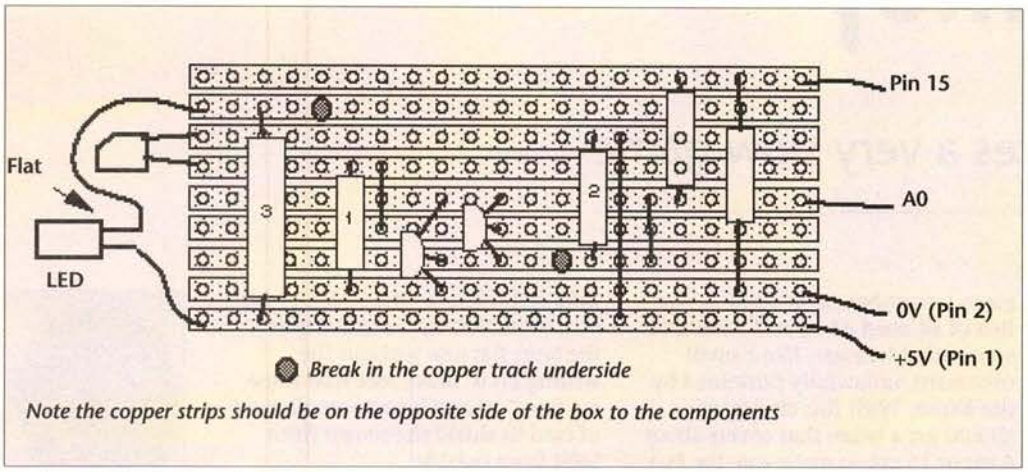
Mike Cook is a senior lecturer in Maths and Physics at Manchester Polytechnic. He has written over 100 articles and is the only person to have had something published in every issue of The Micro User/ Acorn Computing.



● *Figure 1: The treasure chest*



● *Figure 2: The circuit for the alarm sensor*


Pin 15
Flat
A0
LED
0V (Pin 2)
+5V (Pin 1)
Break in the copper track underside
Note the copper strips should be on the opposite side of the box to the components

● *Figure3: The layout of the circuit*

> If you are really serious you would just turn off the computer

computer then all except the Compact has an Analogue joystick port. Using the 32-bit computers this port is an add-on in the form of the I/O podule. If you have not got this you need an A/D (analogue to digital) converter.

The best way of doing this is to use the I²C interface bus described in the June Body Build article. If you do not have that back issue you can get a reprint of it and any other Body Build article from Musbury Consultants for £1.

As the I²C interface accepts a voltage range from 0 to 5v you do not need the two resistors marked with *. This is only needed when you use the joystick ports. This is because the input range of these ports is between 0 and 1.8v. All the electronic parts for the project are available as Body Build Pack No. 80 though you have to provide your own treasure and box

Figure III shows the layout of the circuit using Vero board. It is shown with the components on top and the copper strips on the back. The copper strips have been drawn as if you were viewing them through the board. This is so that you can see where the breaks go and the orientation of the strips.

There are two places where you have to break the copper tracks. This is best done with a spot face cutter – a small tool designed for the job. You can use a twist drill bit but make sure you do not leave a thin copper whisker behind, joining up the track. Alternatively you can make two parallel cuts with a Stanley knife and remove the small section of copper between the cuts.

There are two versions of the software SneakT1 is for use with the Analogue joystick input and SneakT2 is for use with the I²C interface. Both programs are featured on the subscription disk or a printout can be obtained with the Pack. The operation is identical.

Basically the software reads the voltage from the sensor and tests to see if there has been a large change between the present and the last time the sensor was read. If there is and the alarm rings, you have lost the game.

You can alter the difficulty of the game by varying the time between looks at the sensor voltage. With a shorter time you can in effect move faster than with a longer time, the time is set up at the start of the game when you are asked for the level. This number is used in a delay loop to control the number of 25ths of a second between looking at the joystick port.

The time is defined by a *FX19 call which waits for the next frame sync pulse. The alarm is triggered when the difference between the current and last reading is greater than 2. Therefore, on the easiest level you should be able to get your hand into the box in five seconds.

As the reading difference between uncovered and fully covered beams is a range between 0 and 256 you can afford to change by 2, and this gives 256/2 or 128 readings. As you are taking 25 of these a second you have 128/25 or 5.12 seconds.

I doubt whether you can do it that fast, and remember it will also take 10 seconds to get your hand out the box as well. If it really is too hard even at the easiest levels you can alter the trigger value in line 380 of the programs.

In order to help you the current value from the Analogue port is displayed as a line as well as having the numerical value shown. In addition the difference is also shown – in this case the line is on a larger scale as the difference is generally much smaller.

Like all Body Build articles I would encourage you to modify and adapt the programs here. For example you could change the game so that it records the biggest difference of any run and ranks attempts by this figure.

Anyway remember this is for fun only don't try these techniques on a real burglar alarm or, if you do, don't get caught and I will see you next month.

Body Building Pack Order Form

Body Build Pack No. 80
Sneak Thief.....£4.50

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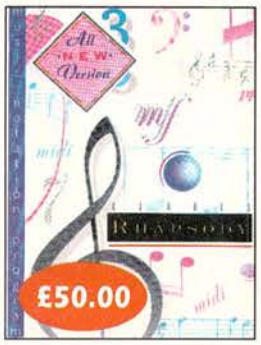
Archimedes Only

Rhapsody II

A score writing program which has been designed to allow you to create and edit your own musical scores. You can enter your music by hand one note at a time, drag the notes on to the stave or you can even use a Midi instrument to capture music in real or step time.



If you have a Midi instrument attached to your Archimedes you can play a part and then transcribe it on to a stave. This can be repeated and each part entered via the Midi keyboard and transcibed on to the appropriate stave. And of course you can play your score back through the Midi Keyboard.

The package features automatic beaming, up to 24 staves, changes of tempo and volume, ties, triplets, user defined trills and so on.

When your masterpiece is complete you could print the whole score or individual parts in the usual way.

MIDI Expansion Card

Recommended for use with our music notation package Rhapsody II. By simply plugging in the midi interface it allows the user to connect a MIDI keyboard to the computer. You can then play a tune direct from the keyboard and capture the musical notes in Rhapsody. The music can then be transcribed ready for editing, replaying etc. With your score in memory you can replay it via MIDI, assigning the data to the MIDI channels available on your keyboard. Allowing the user to replay their masterpiece in full!

Price £45.00 (for A3000 machines) £65.00 (for 300/400 machines)

SPECIAL OFFER
Buy Rhapsody II & Midi Expansion Card for
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Toolkit +

Toolkit + is an improved version of the original Toolkit. Enhanced features include:

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- FASTLOAD & FASTSAVE of screens
- A Series of commands to investigate SWI calls filetypes, files between specific dates or a combination of these parameters.
- Archiving so that you can back-up on your Hard Disc onto floppies, matching specific criteria.

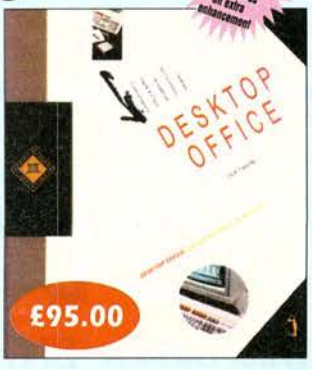
It handles files larger files larger than 800k and is designed to cope with disc faults on both Hard Discs and floppies. Even if you lose one of your back-up discs you can still restore everything else, and of course the archived files can be restored at a later date.

£39.95

DESKTOP OFFICE
for the Archimedes

New Version II with NEW version of Minerva's EasiWordWord Processor as an extra enhancement

At last – a fully integrated suite of database, word processor, spreadsheet, charts and communications for the Archimedes. The database is simple to set up with a flexible card layout enabling you to design cards to suit your data. Video style controls make it easy to browse through the records. With instant search on a key field, sort routines and reports available on any combination of fields, DTOBase gives you true power and flexibility while remaining simple to use.

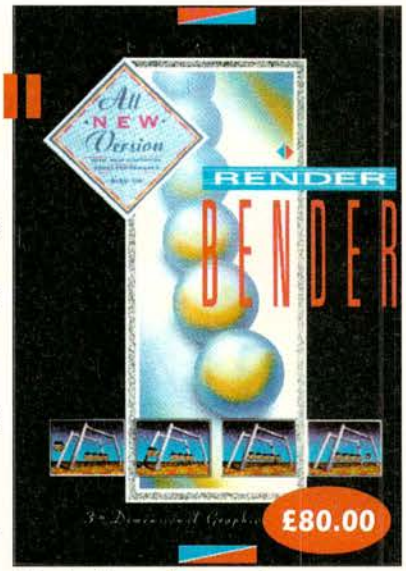


Elite

Good games come and go, and great ones last much longer, but only one can claim to be ELITE. Generations have played it some have even beaten it, but none have tired of it. Now, the original award-winning formula of space exploration, trading and combat has been enhanced and extended as never before, using the power of the Archimedes to present the ultimate computer game experience and, once again, the time-honoured challenge - have you got what it takes to become one of the Elite?

HYBRID
ELITE
100% Rated
New version has joystick control for users of A3010 and other machines with joystick adaptors
£31.00

Render Bender II



Render Bender II is another top rated graphics package from Clares. It is a powerful ray tracing package which consists of four applications:

Illuminator - a graphical front end to Render Bender which enables you to create Render Bender files using a graphics program similar to Draw.

Render Bender - the Ray Tracing part of the package. It takes a file from Illuminator and generates a ray traced image.

Animator - takes a sequence of screens and delta compresses them to produce an animated sequence.

Converter - converts compressed screens into sprite files and enables you to extract individual screens from an animation file.

Archimedes Game Maker's Manual

Now you can find out how to use your Archimedes and Basic 5 to build high quality games whether for education or for recreation. Ideal for the experienced or novice Basic programmer, Terry Blunt takes you through the seven major aspects to writing a successful and professional product: Planning a game; Critical games stages; Graphics and animation; Arcade games; Role playing games; Strategy games; Professional tips and tricks. You can see the principles laid out in fully tested listings. This book is sure to become an essential reference written in an informative and easy to read style. If you want to know how to use the Arc's graphics capabilities and sprites to full advantage and make better games, buy this book now. It's the only one you'll ever need - quote from *Micro User August issue.*

BBC Only

Hybrid Music 5000 (BBC Only)

The Music 5000 is a powerful stereo digital synthesiser which allows you to take a piece of music all the way from a sheet score, or an idea, or even one of the supplied examples through entry, arrangement, replay and mixing to give a finished performance complete with realistic instruments and studio effects.

The system is capable of a vast range of high quality instrumental; percussion and effect sounds, including natural-sounding synthesiser-types as well as the abstract up to-eight at a time. You can choose a predefined sound from the library, a variation or a completely new sound created from hundreds of alternative waveforms, envelopes and modulations.

The software is based on the AMPLE music language which is powerful, versatile and easy to use. It has built-in computer music notation as well as supporting a music keyboard, sound expander and Midi.

The Music 5000 will turn your BBC Micro into a computerised music production studio. The manual is written for the beginner to computer music and the Tutorial section takes you through each of the processes set by set entering, editing, arranging, mixing, performing, selecting, modifying and designing the musical instruments that you see.

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Music Albums Compendium for Hybrid Music 5000

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Notes, Inside Stories, AMPLE Vibrations, Muisc City 2, Contrast, AMPLE DCT, Plaice, Electricity, Shivering Again and Ashes.

Special Offer Price: £19.00 (normally £45.00)

Music Publisher

Music Publisher is a powerful new software package that lets anyone create and print high-quality musical scores using a BBC Micro and low-cost printer. It does for printed music what the word processor does for text, allowing music to be entered, edited, stored and printed out in a variety of formats. But it doesn't stop there, because unlike previous programs, Music Publisher handles the complex process of score layout entirely automatically, applying the rules of notation to produce perfectly composed pages without user effort.

Music Publisher is also very easy to use. The user enters the score in text form using simple codes for the musical symbols and the program instantly lays out the current section of the staff, visible in a window about the text. Full layout and justification takes place automatically when the score is previewed or printed, and is very fast - about 2 seconds per line of music.

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Europress Publications' DTP

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THE PERFECT PAIR

The best-selling, award-winning BBC software is now joined by THE definitive guide

The Program

Mini Office II is the highly-acclaimed suite of integrated programs which turn your computer into a versatile business machine.

It's the perfect package to increase your personal productivity – with more than 400,000 satisfied users across the complete Mini Office range.

The Book

The Dabhand Guide to Mini Office II is a brand new book to help you get the most out of the software. It not only contains the facts, but also the kinds of hints and tips that can only be built up through years of computer use.

More than a manual, the guide assumes nothing. Beginning with the first sentences typed into the editor, you are led through all aspects of using the system, up to the most advanced techniques.

All the examples are also on an accompanying disc which even includes a very useful routine to print out large spreadsheets sideways.

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A Dabhand Guide
Mini Office II
DABS PRESS
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For the BBC and Archimedes range of computers

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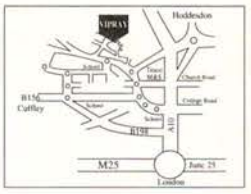

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Integrex printing problem solved

I CANNOT get my A5000/Integrex 132 combination to print although the printer works perfectly well with my A440. I have tried to get information from both Acorn and Integrex, as well as from other sources, but to no avail.

As Integrex printers without Vu-Data interfaces seemed to print as normal from A5000 machines, I asked Integrex whether they thought it was worth taking the printer apart and disconnecting the ribbon cable from the Vu-Data interface altogether.

I was told that as long as the rotary switch on the front was turned to C the Vu-Data interface was disconnected. I persevered with various other remedies *but all to no avail. I've spent many many hours trying to solve this problem.*

Finally I decided to ignore what Integrex told me and disconnected the ribbon cable, The printer immediately sprang into life and has been printing normally every since with both computers.

Is seems a pity that two firms like Acorn and Integrex cannot sort out problems like this, to enable all interfaces to be used without all this effort. After all I was prepared to pay extra money for a printer with extra interfaces so that I could use it with different applications and machines.

A bug or incompatibility is preventing me from doing this. It doesn't seem right to spend more money to get extra problems and none of the advantages.

I hope that this solution helps others in my position. If you want to try yourself make sure that the printer is turned off first. Remove the two screws under the printer and unhinge the top. The Vu-Data interface sits on the right just in front of the transformer and next to the on/off switch.

A ribbon cable is soldered to the centronics socket terminals at the back of the printer and leads to a small plastic plug which is connected to the back of the Vu-Data interface PCB.

Gently lift this plug off all the terminals and lay it to one side. A l ittle sticky tape will ensure that it will not move. Replace the cover and the dirty deed is done. If you want to use the RS232 or Vu-Data interface again you'll have to reconnect it again. – **R. H. Batter, Ravenhill, Swansea.**

Customising Menon

IN my school we use Menon to load all the applications. We have one copy in the library and everyone has access to it. Most people have no need to add or delete any options, so do you know a way of altering the software so select and adjust are ignored and only the menu is accepted by the the Menon icon on the iconbar? – **G. I. Crowe, Droitwich, Worcestershire.**

● To get it customised you would have to contact the author – Joris Röling – directly, his address is in the help file for Menon.

Printer monitor

EDWARD Rees' letter in the August '92 issue of Problem Solved asked if you have designed a monitoring unit for printers. Well, in the September 1989 issue of Elektor Electronics *there was a Centronic Monitor project by A. Rigby.*

If Mr Rees would like to contact me at the above address I will gladly supply him with a copy of the magazine. – **Ian Newcombe, 91 Cudworth Road, South Willesborough, Ashford, Kent TN24 0BE.**

Electron connection

RECENTLY you printed a letter enquiring where to find an input/output port for an Acorn Electron.

We can supply an I/O expansion incorporating a printer port and a user port although it needs a separate power supply. Both a ready-made unit and a circuit diagram are available. – **Ross Little, The Old Police House, Main Road, Filby, Great Yarmouth NR29 3HY.**

● Thank you, Ross. It's good to see the Electron is still alive and kicking.

Valid source

LOOKING through my old subscription disks I came across !OnePrint, a PD application which seemed quite useful. As a matter of course I ran the virus detector, !Killer, on this disk which told me that there was a copy of the Valid virus on it.

How does this virus spread and can the program be salvaged? – **Colin Sutton, Bradford, Yorkshire.**

● Despite what Killer said, the Valid virus isn't in !OnePrint and here's why: The programmer of !OnePrint called the main program of the application *Source* and not !RunImage as he should have done.

What the Valid virus does is rename the existing !run file to Valid then creates its own !run file,

Print it right

PRIZE LETTER

WITH reference to C. H. Hutt's letter in the June issue of The Micro User, *I have been investigating paper handling under Risc OS and the reason for the problems is that the driver disagrees with the printer – and perhaps with reality itself – about the size of paper being used.*

When the driver finishes printing a page it sends a form feed to line up the paper for the next page. The printer unfortunately already thinks it's on to the next page and feeds right to the end of it.

The first thing to check is that the printer is set up correctly. If normal-sized paper is being used, it should be possible to configure the printer for the right length using the DIP switches.

If odd paper is being used, or many different sizes, it would be advisable to get hold of my PD utility – PageSize – which automatically sets the printer's page size from that of the driver.

Once the printer has been sorted out, the printer driver's page size should be checked using the page size window, The top margin should be set to the distance between the top of the paper and the top of the first line of printing.

This will be in the printer's manual for automatic loading and might as well be set to 0 for manual loading – make sure the top of the paper is in the right place.

The bottom margin should be set to the distance above the bottom of the paper at which the printer stops printing. For continuous paper, a value of about 5mm works for me.

If the problem still persists, increase the bottom margin until it goes away. – **Ben Harris, Wembury, Devon.**

● **Ben Harris will supply copies of his PD utility PageSize if you write with a blank disk and SAE to 9 Brownhill Lane, Wembury, Plymouth, Devon PL9 0JQ.**

the virus itself has the filename Source. Unfortunately Killer just checks for the file Source instead of looking for Valid as well.

If you remove the virus – using Killer's facilities – you would remove the !run file. We have come across this problem with a few programs and Pineapple are aware of this and later versions will take this into account.

Pineapple and Acorn have done an excellent job with Killer and everyone should have a copy of this as it is updated to take into account new viruses as they are detected. For example a lethal virus called Terminator is dealt with on the next release.

Oops

I HAVE noticed a couple of mistakes in the listing in my letter published in the August issue of The Micro User *about deleting nested directories. These errors will prevent the program from working, so here are the corrections:*

In line 40 the equals signs should be a plus sign and there should be a ~ sign at the end of the line after the V and in line 60 the word DIR should be WIPE. I hope that this program will help many stuck with this problem. – **Richard Holland, Overton, Hants.**

● Since publishing Richard's program we have discovered an easier way to remove these directories that doesn't require a program: Press F12 to enter the command line and type:

```
Filer_OpenDir null:
```

Press Return twice to get back to the Desktop and you'll find that a new directory viewer has appeared with the title *null:*.

This is the null system device and anything copied into it disappears. If you now do a Shift+Drag of the nested directory into the *null:* viewer it will swallow the lot and your problem will be solved.

The *null:* viewer is also very handy for deleting directories that have locked files in them because with a Shift+Drag it will wipe out the locked files as well. A word of warning though, this viewer is a bottomless pit, once something has been copied into it it is lost forever.

Green messages

*I HAVE recently bought a BBC B issue 4 with a APTL sideways rom/ram expansion board. In one of the sockets (10) there is a rom. When I typed *HELP I get the message Kermit V1.42. Could you please tell me what this rom is and what it is used for?*

If you do know what it is, where could I obtain some manuals or information on it? – **S. Connell, Penarth, South Wales.**

● It's clear that the rom is related to comms as Kermit is a communications protocol, but we don't know which company produced it. So the first step is to discover who it was, perhaps a reader knows?

Engage

I WAS very interested to read of Compress, Player, CompUtils and SoundCtrl in your August PD column. I am an Archimedes user with an interest in music and sound production as well as an avid Star Trek fan.

However, in the article you fail to mention which PD library the above programs and samples can be obtained from. I would be grateful if you could tell me how I could obtain these. – **Ben Avison, Stokesley, Cleveland.**

● The programs and samples all came directly from the programmer rather than a PD library and were featured in full on the August subscription disc. The moral of this tale is subscribe, though I should imagine that most of the PD libraries will have the suite of programs on their shelves by now.

Adding words

I HAPPENED to see the letter from Mr Worner in the August issue of The Micro User. *Perhaps his daughter, as a new user of the BBC B, will be interested in some information about Corplan which is a comprehensive document management system, particularly useful for letter writing and is based on Wordwise Plus.*

I have used both Wordwise Plus and InterWord and I think that most users unaccustomed to either package would probably prefer InterWord because of its wysiwyg editing screen.

However, this is something of a delusion for the owner of an un-expanded Model B – one without the shadow ram board – because the edit screen is restricted to only 40 columns except for very short documents.

Beyond this point the wysiwyg property is badly impaired and you are trying to use a package designed for wysiwyg editing when the screen is no longer as wide – in terms of character positions – as your paper.

In Wordwise Plus all the editing is done on a 40 column screen and it is unashamedly non-wysiwyg. To compensate the embedded commands are plainly visible – unlike InterWord.

Also Wordwise Plus has the enormous advantage of a programming capability and it is this which is exploited by Corplan to overcome most of the problems of laying out text on a non-wysiwyg screen and to provide many other important features that are not available from InterWord.

You gave the reason for recommending InterWord as it stores the necessary configuration to drive the printer. *This applies equally to Wordwise Plus but in each case it applies only to the configuration of the commands issued from the machine to the printer when printing a document, not to the configuration of the serial port on the machine to enable it to communicate successfully with a particular serial printer.*

With Corplan and Wordwise Plus any required set up can be implemented. This is invaluable in the Model B which unlike the Master has no battery-backed configuration options and must always start up in the default configuration.

Wordwise Plus II from IFEL, 36 Upland Drive, Derriford, Plymouth PL6 6BD is even better than Computer Concepts' Wordwise Plus as it provides virtually all the additional editing facilities of InterWord and some more. The combination of Wordwise Plus II and Corplan is formidable.

Obviously I have an axe to grind here, but I think you will find that the information is correct and honestly balanced and I hope that Mr Worner's daughter will get great pleasure and satisfaction from using the machine. – **Colin Robertson, Corplan Computer Systems, Three Gables, 7a Talbots Drive, Maidenhead Berkshire SL6 4LZ.**

● Colin is biased, of course, but we agree with his main points – Corplan is an excellent product.

All programs printed in this magazine are exact reproductions of listings taken from the running programs which have been thoroughly tested.

However, on the rare occasions when mistakes occur, corrections are published as a matter of urgency.

Should you encounter error messages when you type in the program, they will almost certainly be the result of your own typing mistakes.

Unfortunately we cannot answer personal programming queries concerning mistakes. Of course letters about suggested errors will be investigated without delay, but any replies found necessary will only appear in these pages

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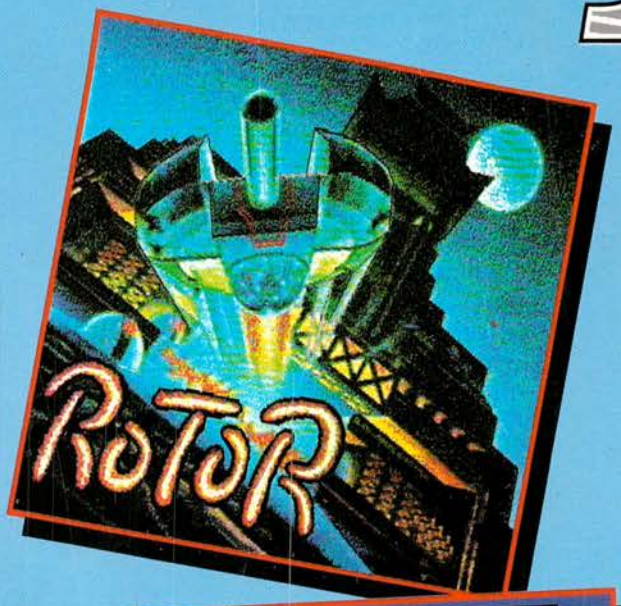

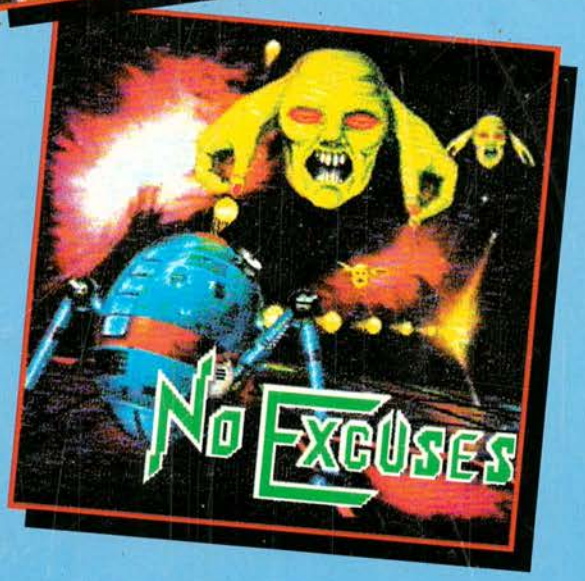

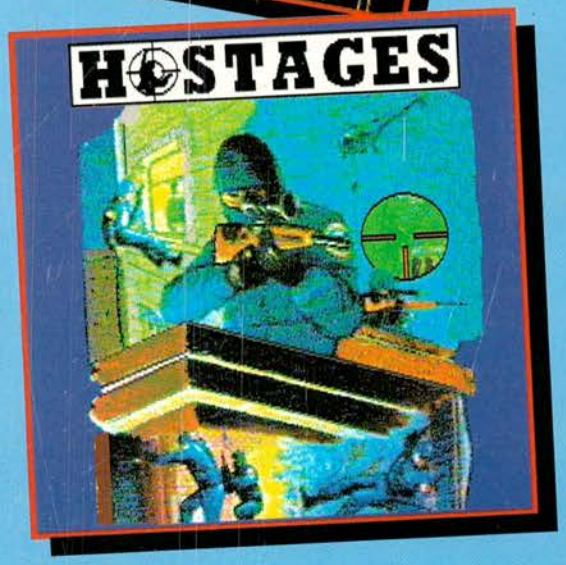

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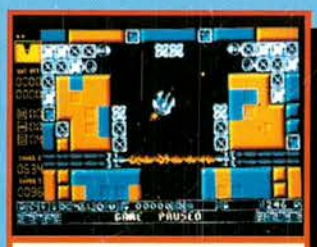

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